Economic analyses to guide health financing dialogues between ministries of finance and health in five ECSA countries

(Eswatini, Malawi, Mauritius, Zambia and Zimbabwe)

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Chapter 1: Introduction

Purpose

The Global Fund commissioned the Centre for Health Economics, University of York (CHE–UoY) and the East, Central, Southern African-Health Community (ECSA-HC) to input analyses to and lead a series of national dialogues within five countries (Eswatini, Malawi, Mauritius, Zambia, Zimbabwe) in the ECSA region. These activities will contribute towards realising the African Union/AUDA-NEPAD (African Union Development Agency) led health financing initiatives, following commitments made to the 2019 Africa Leadership Meeting (ALM): Investing in Health. The ALM Declaration calls on all Heads of State and governments of African Union Member States to increase health financing by increasing domestic resources for health, strengthening health systems, and tackling existing inefficiencies in the allocation of resources. It also calls for stronger partnerships and collaboration between multi-sectoral actors regionally and globally to strengthen existing health systems in the Member States. Thus, this report is designed to provide evidence to guide national deliberations on health financing in the five focus ECSA member countries, with the overall aim of better responding to health sector needs and formulating future strategic directions for the health sector (1).

Background

In countries around the world, Ministries of Health (MOHs) and Ministries of Finance (MOFs) play essential roles in how health systems function and when and to whom health services are delivered (2). While MOHs are responsible for setting national health policy and managing the day-to-day delivery of public health services, they are dependent upon MOFs for establishing funding levels and releasing the necessary funds to finance MOH operations. Thus, there is increasing recognition of the need for improved collaboration between these two ministries. Outcomes of effective MOH and MOF dialogue are i) greater public investment in health and ii) allowing the MOH to program limited available resources to address high-priority health challenges (2). Moreover, these dialogues would ensure a high political commitment in the process, with all stakeholders officially adopting recommendations on health financing actions.

Health leaders and policymakers globally have a shared interest and commitment to achieving universal health coverage (UHC) by 2030. Despite witnessing impressive health gains in the last 20 years (3), problems are particularly acute in sub-Saharan Africa. In many countries, reductions in child and maternal mortality still fall short of the Millennium Development Goals (MDG) and Sustainable Development Goals (SDG) targets, the prevalence of HIV/AIDS and malnutrition is far too common, and most health systems are not able to deal effectively with epidemics and the growing burden of chronic NCDs (3,4). Added to that, development assistance for health has been more or less stagnant since the global financial crisis in 2008 (5). While increased spending is generally needed to overcome these challenges (6), ensuring sustainable progress toward UHC means that a country’s public health financing system must routinely generate sufficient and largely domestic resources to achieve health sector objectives within its macroeconomic and fiscal context. It is not only the level of government health spending that matters for sustaining health systems that can meet UHC goals, but also the efficient, effective and equitable use of those funds. Thus, for a national ministry of health (MOH) to make a substantive case for increased health allocations, it would require evidence on how to improve delivery of health services and population health outcomes in a way that offers taxpayers’ value for money and demonstrates that value to the ministry of finance (MOF).
Making the best use of health care resources is a major concern for countries globally and arguably even more so in the African region where resources are more constrained and the gains from allocating them more efficiently are potentially greater. In all the five ECSA focus states, efforts are being made to strengthen health system performance, focusing on universality in health care access of acceptable quality. However, inevitably, the cost of the available opportunities to enhance population health always exceeds the available funding, meaning difficult choices need to be made. Addressing the challenges of policy formulation and resource allocation therefore remains an urgent research priority.

This report aims to inform policy issues at the national level, support the achievement of commitments made by the five focus ECSA member states within the health sector and address national challenges toward achieving global and continental goals (e.g., the SDGs). The intended audience is national policymakers and other stakeholders in the countries, especially from the MOF and MOH, but also including parliamentarians, international development partners, civil society, health care professional groups and patient and community representatives. Important current policy issues for the focus countries include strengthening the use of evidence in health policy, enhancing universal coverage and priority setting and health benefits packages. We will share knowledge and experience of the challenges of designing and implementing resource allocation policies by synthesising available tools and evidence, conducting analyses and providing health economics perspectives to various policy issues, for the consideration of the region’s decision makers.

The report summarises the current health sector and macroeconomic situations in the five focus countries, using a wide range of health data and government documents. We then review, synthesise and present relevant literature, as well as novel analyses, that align with the three main objectives contained in the ALM health financing progress tracker (Appendix 3) -

- Health and the macroeconomy *(Objective: More money for health)*
- The marginal productivity of health spending *(Objective: More health for the money)*
- Health sector resource allocation *(Objective: More health for the money)*
- Equity in health financing *(Objective: Equity and financial risk protection)*

For each research area, we will highlight demand-responsive evidence-based policy tools and frameworks to inform health system-wide policies for the five focus ECSA countries. These tools and frameworks will address the challenges faced when deciding how health care is financed, organised, and provided to their population to ensure ‘value for money’ in the face of limited financial, human, and material resources. We then provide recommendations for future actions. Ultimately, they will contribute to the implementation of strategies toward meeting the sustainable development goal of universal health coverage (UHC) in the focus countries. Furthermore, the evidence and analyses will respond to regional and national health priorities in resource allocation and inform the MOF and MOH financing dialogues in the focus countries.
Chapter 2: Health financing situation analysis

Malawi

Socioeconomic Context

Malawi is a landlocked country in the sub-Saharan Africa region divided into three administrative regions, namely the northern, central, and southern regions. The country has 28 districts, which are further divided into traditional authorities (TA) ruled by chiefs. It had an estimated population of 17.6 million people in 2018 (7) with an average annual growth rate of 2.7%. About 84% of the population lives in rural areas compared to 16% in urban centres. The economy is predominantly agro-based, with agriculture, forestry, and fishing contributing to 28% of GDP. In Malawi, 49% of the population are male, and 51% are female, with life expectancy at birth estimated at 63.8 for both sexes in 2018. The total fertility rate has declined from 5.3 in 2010 to 4.2 in 2018. As per the census, about 15% of the population are under-five years, 49% are 18 years or older, and 4% are aged 65 years or older. Categorised as a least developed country by OECD, Malawi has one of the lowest GDP per capita in the world, approximately USD 390.8, and real GDP growth of 4.4% in 2018 (8). Informal employment is higher than formal employment, estimated at 89% and 11%, respectively. It is estimated that 50.7% of the population lives below the national poverty line, with 20.5% living in extreme poverty, especially in rural areas. Income inequality, as measured by the Gini coefficient, is 0.38 (9). Literacy is higher among men (83%) than women (72%) (10).

Table 1: Key Socioeconomic Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>17.6 million</td>
</tr>
<tr>
<td>GDP per capita (constant 2015 US$)</td>
<td>390.8</td>
</tr>
<tr>
<td>% Rural Population (Census 2018)</td>
<td>84%</td>
</tr>
<tr>
<td>% of employed in informal sector</td>
<td>89%</td>
</tr>
<tr>
<td>Total Fertility Rate</td>
<td>4.2</td>
</tr>
<tr>
<td>Life expectancy rates, total in years</td>
<td>63.8</td>
</tr>
<tr>
<td>Adult Literacy Rate</td>
<td>76%</td>
</tr>
</tbody>
</table>

Source: World Development Indicators (WDI) 2021, WHO Global Health Expenditure database (GHED) 2021
Health Status

Malawi has made significant gains in the health sector, especially in child health. Estimates from the UN Inter-agency Group for Child Mortality Estimation (11) database revealed that in 2019, the Infant and U5 mortality rates declined to 30 and 41 per 1000 live births, respectively. In fact, Malawi’s IMR in 2019 is the lowest amongst its peer countries – Zimbabwe [38] and Zambia [43] – as well as lower than the averages for SSA and LDCs, as shown in Table 2 below. The maternal mortality ratio (MMR) witnessed a steady decline from 675 to 439 per 100,000 live births in 2016, while the neonatal mortality rate (NMR) reduced to 20 from 28 per 1,000 live births in 2019. The gains in health outcomes could partially be attributed to increased utilization (more than 90%) of some key services, such as skilled attendance at birth and antenatal care during pregnancy. However, despite the progress, both U5 and NMR are approximately 1.6 times the SDG 3.2 target of 25 deaths per 1,000 live births and 12 deaths per 1,000 live births, respectively. Moreover, Malawi’s MMR and NMR are among the highest in Sub-Saharan Africa. This could be linked to high rates of early sexual debut (13%), adolescent pregnancies (29%), and birth rate (136 per 1000 women) (10). There has also been a decline in the percentage of children aged 12-23 months fully immunised from 81% in 2010 to 71.3% in 2016. Stunting also went down by 10%, from 47% in 2010 to 37% in 2016. As per Global Disease Burden (GDB) 2019 (12), malaria, diarrhea, and lower respiratory tract infections are leading causes of DALYs in Malawi after maternal and neonatal disorders among children under 5. In fact, malaria accounts for 12.5% of total DALYs among children under 5 as of 2019. Household access to safe water and the use of toilets is key in controlling water-borne diseases. Malnutrition and WASH are among the top four risk factors driving the most death and disability combined in Malawi (12). The proportion of households who obtain drinking water from an improved source has increased from 80% in 2010 to 87% in 2016. However, only 52% of households use improved toilet facilities, while 6% do not use any toilet facilities.

Table 2: Key Health Outcome Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Malawi</th>
<th>2010</th>
<th>2019</th>
<th>Avg LDC</th>
<th>Avg SSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMR per 100,000 live births) (2016)^</td>
<td>675</td>
<td>439</td>
<td>415</td>
<td>533</td>
<td></td>
</tr>
<tr>
<td>IMR (per 1,000 live births)</td>
<td>52</td>
<td>30</td>
<td>45</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>NMR (per 1,000 live births)</td>
<td>28</td>
<td>20</td>
<td>26</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>U-5 MR (per 1,000 live births)</td>
<td>84</td>
<td>41</td>
<td>63</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Prevalence of HIV, total (% population ages 15-49)#</td>
<td>10.73</td>
<td>8.42</td>
<td>2.2</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>Incidence of tuberculosis (per 100,000 people)*</td>
<td>310</td>
<td>193</td>
<td>-</td>
<td>226</td>
<td></td>
</tr>
<tr>
<td>Incidence of malaria (per 1,000 population at risk)*</td>
<td>386</td>
<td>211</td>
<td>171</td>
<td>214</td>
<td></td>
</tr>
</tbody>
</table>

Source: UNICEF 2021; *WDI 2021; ^Malawi Demographic Health Survey (DHS) 2017, #GDB 2019
Communicable diseases remain the leading causes of DALYs and deaths in Malawi (12). Among the top five causes of death and disability in Malawi are HIV/AIDS, Malaria, lower respiratory infections, diarrheal diseases, and TB. The HIV prevalence among women and men aged 15-49 decreased between 2010 and 2019 from 10.73% to 8.42%. HIV prevalence is higher among women than men (10.48% versus 6.17%) and 2% among young (15-19) men and women (12). The death rate associated with TB decreased from 19% in 2005 to 8% in 2014; however, the TB treatment success rate is reported at 86%, below the WHO target of 90%. The national TB Prevalence Survey 2014 indicates that there is still a high TB burden in Malawi, with an estimated prevalence of 451 per 100,000 among the adult population. Though Malawi has managed to reduce malaria incidence by 26%, from 386 cases per 1000 population in 2016 to 286 per 1000 in 2019, it is among the top 10 causes of death in Malawi and remains a major public health problem accounting for 6.5% of all deaths. Furthermore, while Malawi continues to struggle with reducing its communicable disease burden, Non-Communicable Diseases (NCDs) are increasingly contributing to the burden of disease in Malawi. As of 2019, NCDs are the second leading cause of death in adults in Malawi, responsible for 38% of all deaths and 34% of DALYs in Malawi. The top five causes of NCD-related deaths are cardiovascular diseases, cancers, digestive diseases, diabetes, and kidney diseases. Mental disorders are also very common among people in Malawi, whose prevalence is estimated at 11.25% in 2019. Moreover, road traffic-related injuries and death are becoming a big public health problem in Malawi, with an 11% increase in the total number of road traffic accidents and a 9% increase in deaths between 2013 to 2016.

Health Sector Profile

Health services in Malawi are provided by public, private for-profit (PFP), and private not-for-profit (PNFP) sectors. The public sector includes all health facilities under the Ministry of Health (MOH), district, town, and city councils, Ministry of Defence, Ministry of Internal Affairs and Public Security (Police and Prisons), and the Ministry of Natural Resources, Energy and Mining (13). The PFP sector consists of private hospitals, clinics, laboratories, and pharmacies. Traditional healers are also prominent and would be classified as PFP. The PNFP sector comprises religious institutions, non-governmental organizations (NGOs), statutory corporations, and companies. The major religious provider is the Christian Health Association of Malawi (CHAM) which provides approximately 29% of all health services in Malawi and 75% of service delivery in rural Malawi (14). While the public sector provision of health care is free, most private and private-not-for-profit providers charge user fees for their services.

The Malawi health sector operates under a decentralized system guided by the Local Government Act (1998). The national health budget is currently programmed through four channels, otherwise known as budget votes, namely, Ministry of Health and Population (Vote 310); District Councils (Vote 900); National Local Government Finance Committee (Vote 121); Subvented organizations (Vote 275). Further, there are four main budget components; personnel emoluments (PE) budget, drug budget; other recurrent transactions (ORT) budget; development budget (Part I & Part II) (15).

The decentralized system has four tiers of service delivery: community (HSAs health posts, dispensaries, maternity, and village clinics), primary (health centers and community hospitals), secondary (district and CHAM hospitals), and tertiary (central hospitals) which are linked to each other through an established referral system. The community, primary and secondary level care fall under district councils. Progress against key health indicators is hampered by several challenges that are felt through all levels of Malawi’s health system, particularly in the area of human resources for health (HRH). According to the World Bank Workload Indicators of Staffing Need (WISN) study (16) completed in 2017, there is an overall vacancy rate of 51%
across all cadres. The WHO recommends that 4.45 skilled health workers (such as doctors, nurses, and midwives) per 1,000 population, but Malawi has only around 0.51 professional health workers per 1,000 inhabitants, approximately one-ninth of what a country needs to realize UHC and the SDGs. Moreover, there is an acute shortage of nursing/midwifery officers and pharmacists (17). The Malawi HRH Strategic Plan 2018-2022 identifies inadequate and unsustainable funding as critical bottlenecks for HRH in Malawi, as a result of which the sector suffers limited in-service training and poor staff retention. With respect to access to health facilities, the proportion of the population living within an 8 km radius of health facilities (health centers and hospitals) stands at 90% in 2016, an increase from 81% in 2011. However, 56% of Malawian adult women still cite distance to health facilities as a key barrier to health access when they are sick. Most of the health facility infrastructure across the Government and CHAM is dilapidated due to long periods of lack of maintenance (13). In addition to shortages of skilled health workers, health care quality has also been compromised by drug stockouts (availability of essential drugs at 38%), weak supply chains, inadequate basic equipment, transport for referral of emergencies, and infrastructure in most health facilities.

Health Expenditure Review
Since 2012-13, Malawi’s spending on health has been below the Abuja Declaration target for the African States to allocate at least 15% of their total budget to the health sector. The share of the total government budget allocated to the health sector has averaged 8.5% between 2017 and 2019. In relation to GDP, health sector budgets stagnated at around 2.4% over the same period, below the WHO target of 5% for progressing towards UHC. Malawi’s government health spending as a percentage of GDP and total government expenditure (TGE) is comparatively better off than its regional peers (Table 4 below). However, Malawi spends relatively less government resources on health in per capita terms than its neighbours, except Mozambique. The per capita government health spending is around US$16 in Tanzania and US$30 in Zimbabwe, compared to US$9.3 in Malawi. This also remains far short of the World Health Organization (WHO) minimum per capita investment (US$86). Moreover, in real terms, public expenditure on health has remained stagnant over the years, despite the increasing population and high disease burden.

Table 3: Government Health Sector Spending in Malawi and Comparator Countries, Average 2017-19

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita GGHE-D (Current US$)</th>
<th>GGHE-D as a % of GDP</th>
<th>GGHE-D as a % of total government expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malawi</td>
<td>9.3</td>
<td>2.4%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Zambia</td>
<td>28.2</td>
<td>2.0%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>30.4</td>
<td>2.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>8.4</td>
<td>1.7%</td>
<td>5.5%</td>
</tr>
</tbody>
</table>

1 Includes only medical officers, clinical officers, medical assistants, nursing officers, and nurse midwife technicians and assistants, for comparison with the WHO threshold.
2 Government health spending in this context refers to the domestic general government health expenditure (GGHE-D) which excludes the expenditure from donors or external sources that is channeled through the national (public) system.
From 2012 to 2019, Malawi’s total CHE per capita averaged at US$36 per year and is relatively higher than the average of US$34 for low-income countries. However, it is lower than the US$72 per capita per annum required for low-income countries like Malawi to provide essential health care as outlined in the national EHP (Jamison et al. 2018). Malawi’s total CHE as a share of GDP was about 9.7 percent per annum (on an average) over the same period, almost twice the 4.9 percent average for low-income countries (8,18).

Results of the Health Sector Resource Mapping (HSRM) round 5 (19) revealed that donors contributed an average of 75 percent to the funding of the Malawian health sector between 2018 and 2020, excluding household spending on health. Of the total CHE, 58 percent (on average) comes from external partners, including bilateral, multi-laterals, NGOs/foundations, private companies, and funding from private individuals. The government’s contribution is estimated at about 24 percent of the total CHE. Since the ‘Cashgate’ scandal, most donors have opted to provide funding to the health sector through vertical programs and projects, with 74 percent of donor funding to the health sector off-budget and only 26 percent pooled under the government budget as of 2017-18. It is also important to note that since 2013-14, the contribution of households, employers, and local NGOs to the total spending in the health sector has been increasing consistently (18% of CHE on average). Out-of-pocket expenditure on health as a share of the total current health expenditure has increased from 6.6% in 2012-13 to 12.7% in 2017-18. This suggests that the sustainability of healthcare financing in Malawi is relatively weak as it relies on a high percentage of funds from external sources and high out-of-pocket expenditure.

In Malawi, health expenditures from all the main financing sources are generally aligned to the disease burden, but priorities differ substantially. Overall, HIV/AIDS, which ranks first on Malawi’s disease burden, receives the largest share of funding. Of the total resources from donors in 2017-18, about 43 percent was spent on HIV/AIDS, 21 percent on reproductive health, 9 percent on nutritional deficiencies, 8 percent on malaria, and 5 percent on non-communicable diseases. Meanwhile, the order of prioritization of spending by the government and households was HIV/AIDS, non-communicable diseases, malaria, reproductive health, and nutritional deficiencies. While all three financiers focused their spending on the top 10 causes of DALYs in Malawi, government and household funding were more aligned to the order of priority of the disease burden.

The government of Malawi funds approximately 25 percent of the health sector (19), with a majority of health sector resources allocated to the Ministry of Health (53%), followed by 44% being channeled through district councils and 3% to subvented health organizations (SHOs) as of 2018-19 (20). Public health spending is skewed in favor of personnel emoluments (PE). Between 2014-15 and 2018-19, more than half (51%) of total public expenditure on health was on PE. This is fairly low compared to its peers like Zambia (62%) and Zimbabwe (60%). After PE, expenditure on other recurrent transactions (ORT) comes second, followed by expenditures on drugs and medical supplies and infrastructure development. At 16%, expenditure on drugs and medical supplies as a share of total public expenditure on health is significantly lower than the African regional average of 33 percent. The current level of funding only caters to a six-month supply, which leads to persistent shortages at hospitals and health centers. According to results from the Harmonized Health Facility Assessment (HHFA) (21), on average, health facilities countrywide had only 38 percent of the essential

<table>
<thead>
<tr>
<th>Tanzania</th>
<th>15.9</th>
<th>1.6%</th>
<th>9.5%</th>
</tr>
</thead>
</table>

Source: WHO Global Health Expenditure database (GHED); National Health Accounts (NHA)

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3 Health regulatory bodies like the National AIDS Commission, Medical Council of Malawi, Malawi Red Cross Society etc.
medicines they should have, and no health facility had all 24 essential medicines at the time of the survey. Development expenditure\(^4\) as a share of the total public expenditure on health has varied from 5 percent in 2014-15 to 16 percent in 2015-16 and has been between 12 and 13 percent in 2017-18 and 2018-19. As of 2021-22, the government’s contribution to the development budget has remained the same at 15% or 6% of the total MoH budget. Meanwhile, the incidence of donor contribution to on-budget development projects remains high at 85% (or 33% of the MoH budget). The main areas for the expenditure on development were physical structures and medical equipment, which constituted about 98 percent of total expenditure on infrastructure development. Lastly, in 2020-21, the government allocated 5.5% of the health budget for the COVID-19 response, with the majority (63.5%) financed by donors.

The health sector is the second-largest fiscally decentralized sector in Malawi after education. The share of total public expenditure on health at the district level has been the largest, with an average of 61 percent per annum between 2014-15 to 2018-19. The share of spending on personnel emoluments at the district level is high, increasing from 65% in 2016-17 to 73% in 2018-19. This makes recruiting additional health workers in the public sector very difficult. Expenditure on ORT is very low at 9%, which affects service delivery activities such as outreach and supportive supervision at the district level. Finally, at 18%, spending on drugs and medical supplies is also poor at the district level. This has negative implications for the country's supply and access to quality and efficacious medicines. Lastly, due to poor public spending on medicines, household spending on medicines has been increasing consistently over the years between 2010-11 to 2016-17 (22).

\section*{Zambia}

Socioeconomic Context

Zambia is a landlocked country in the southern part of the African continent and is divided into 10 administrative provinces and 110 districts. It had an estimated population of 16.89 million people in 2018, growing at a rate of about 2.9% per annum (23). About 57% of the population lives in rural areas compared to 43% in urban areas. The economy is mixed, consisting of mining, agriculture, and construction as major economic sectors. In Zambia, 50.5% of the population are male, and 49.5% are female, with life expectancy at birth estimated at 54.6 for both sexes in 2018 (23). As per the census projections, around 18% of the population are under-five years, 54% are 15 years or older, and 2.6% are aged 65 years or older. The total fertility has declined from 5.3 in 2013 to 4.7 in 2018 (24). Categorized as a lower-middle-income country, Zambia has a per capita Gross Domestic Product (GDP) of around USD 1,368.6 in 2018, with average annual GDP growth of 3.6% (8). The unemployment rate in Zambia is estimated at 12.5% in 2018, with only 13% of the labor force employed in the formal sector. Zambia is also known to have one of the highest poverty and inequality rates in the SA region. The 2015 Living Conditions and Monitoring Survey (LCMS) (25) results show that 54.4% of the population were defined as poor with the majority of the poor (77% in 2015) residing in rural areas and 40.8% living in extreme poverty. Income inequality, as measured by the Gini coefficient, rose from 0.60 in 2006 to 0.69 in 2015. Literacy\(^5\) is higher among men (82%) than women (66%) (24).

\(^4\) Development budget for health is entirely centralized and funds are channeled via the Ministry of Health
\(^5\) Age 15-49 years
Table 4: Key Socioeconomic Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>16.8 million</td>
</tr>
<tr>
<td>GDP per capita (constant 2015 US$)</td>
<td>1368.6</td>
</tr>
<tr>
<td>% Rural Population (Census 2018)</td>
<td>57%</td>
</tr>
<tr>
<td>% of employed in informal sector</td>
<td>87%</td>
</tr>
<tr>
<td>Total Fertility Rate</td>
<td>4.7</td>
</tr>
<tr>
<td>Life expectancy rates, total in years</td>
<td>54.6</td>
</tr>
<tr>
<td>Adult Literacy Rate</td>
<td>86.7%</td>
</tr>
</tbody>
</table>

Source: Central Statistical Office (CSO) 2013, WDI 2021, Zambia DHS 2018

Health Status

Over the last few years, Zambia has made significant strides in improving key health outcomes. As per the recent Zambia Demographic Health Survey (ZDHS) (24), IMR reduced from 45 per 1000 live births in 2014 to 42 per 1000 live births in 2018, while U-5MR reduced from 75 per 1000 live births in 2014 to 61 per 1000 live births. Remarkable improvements have been achieved in reducing the MMR from 398 deaths per 100,000 live births in 2014 to 252 deaths per 100,000 live births in 2018. Given the performance of these selected indicators between 2014 to 2018, Zambia is on course to meet its SDG targets on maternal, under-5, and infant mortality by 2030. The country is also on track to reach universality for skilled birth attendance, which increased from 64 percent in 2014 to 80 percent in 2018. In addition, 84 percent of deliveries were in a health facility in 2018 compared to 67 percent in 2014 and immunization has increased from 68% in 2014 to 75% among children aged 12-23 months. However, during the same period, NMR increased from 24 to 27 deaths per 1000 live births. Despite the decrease, maternal mortality is still high in absolute terms, and Zambia was not able to achieve the MDG target of 162 deaths per 100,000 live births at the end of 2015. Except for NMR, Zambia’s maternal and child outcomes are better than the average for the region as well as its income group. Zambia is unlikely to achieve universality with regard to the use of modern contraceptives for married women (48 percent in 2018). Zambia has one of the highest adolescent birth rates (29% in 2018) in Sub-Saharan Africa, which in turn has the highest rate in the world. WASH is among the top four risk factors driving death and disability in Zambia. In Zambia, only about 54% of households have access to an improved sanitation facility, while 72% of households have access to safe water (24). As per GBD 2019 (12), diarrhea, malaria, and lower respiratory infections are leading causes of DALYs after maternal and neonatal disorders among children under 5. Malnutrition is a major public health problem in Zambia and contributes up to 49% of all under-five deaths. Protein-energy malnutrition figures indicate that 35% of Zambian children are stunted.

Table 5: Key Health Outcome Indicators
<table>
<thead>
<tr>
<th>Indicators</th>
<th>2014</th>
<th>2018</th>
<th>Avg LDC</th>
<th>Avg SSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMR (per 100,000 live births)</td>
<td>398</td>
<td>252</td>
<td>415</td>
<td>533</td>
</tr>
<tr>
<td>IMR (per 1,000 live births)</td>
<td>45</td>
<td>42</td>
<td>46</td>
<td>53</td>
</tr>
<tr>
<td>NMR (per 1,000 live births)</td>
<td>24</td>
<td>27</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td>U-5 MR (per 1,000 live births)</td>
<td>75</td>
<td>61</td>
<td>65</td>
<td>79</td>
</tr>
<tr>
<td>Prevalence of HIV, total (% population ages 15-49)</td>
<td>13.3</td>
<td>11.1</td>
<td>2.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Incidence of tuberculosis (per 100,000 people)</td>
<td>406</td>
<td>346</td>
<td>-</td>
<td>235</td>
</tr>
<tr>
<td>Incidence of malaria (per 1,000 population at risk)</td>
<td>232</td>
<td>179</td>
<td>177</td>
<td>218</td>
</tr>
</tbody>
</table>

Source: Zambia DHS 2013-14, 2018; WDI 2021; UNICEF 2021

Despite progress made in some health outcomes, Zambia remains a country with a high disease burden. Communicable diseases remain the major cause of DALYs (60.5%) and deaths (55%) in Zambia. Within this, the top five causes of death and disability are HIV/AIDS, diarrheal diseases, lower respiratory infections, Malaria, and TB. Adult (15–49 years) HIV prevalence declined from 13% to 11% (24), women (14.2%) disproportionately affected than men (7.5%). With respect to TB, according to the WHO, Zambia is one of the 30 countries in the world with a high TB and TB-HIV burden. The TB prevalence for all ages and all forms of TB is 346 cases per 100,000 populations (8). Malaria also remains a leading cause of morbidity and mortality in the country, despite a declining trend in its incidence from 232 cases per 1,000 population at risk in 2014 to 179 cases per 1,000 population at risk in 2018 (8). Zambia is also experiencing an increasing burden of NCDs over the years. In 2019, it was estimated that NCDs caused 38% of all deaths and 33% of DALYs in the country (12). The most common NCDs in the country include CVDs, cancers, digestive diseases, diabetes, and kidney diseases. Cancer has rapidly become a major factor in the local and global burden of disease with cervical cancer being reported as the most frequent cancer. Road crashes are among the leading causes of death, accounting for 1.85% of all deaths in 2019. Most of these NCDs are associated with lifestyles, such as unhealthy diets, physical inactivity, alcohol and substance abuse, and tobacco use.

Health Sector Profile

The Health Policy is anchored in the devolution of health delivery to the district and hospital levels. Health management is done through provincial health offices (PHOs) (10), district health offices (DHOs) (105), and statutory bodies. The health services in Zambia are provided by four main players, namely the government, faith-based (not-for-profit) providers, the mines, and private (for-profit) providers. The public sector is the biggest health provider delivering 80 percent of all health care; 90% of patients seek care in facilities owned and run by the Government (26). The health system consists of three levels, namely: (i) the district level where Primary Health Care (PHC) services are provided through health posts, health centres, and district hospitals;
(ii) the secondary level which consists of general/secondary level referral hospitals which provide curative care in internal medicine, paediatrics, obstetrics and gynaecology, and general surgery; and (iii) the tertiary level where specialised care is provided. Among the measures to facilitate the attainment of UHC, medical user fees were abolished in rural areas, peri-urban areas, and all primary health care facilities countrywide. MoH has historically been the main implementing agency in the health sector. The provision of health services in the public sector is organised around a referral system, which coordinates patient flows from lower levels of care at health posts to higher levels of care. The MoH’s focus is the provision of a continuum of care with emphasis placed on strengthening health systems and service delivery using the primary health care (PHC) approach. Moreover, community health systems extend PHC delivery to the households in the communities.

Although the supply of Human Resources for Health (HRH) in Zambia has increased over the past five years (27), the expansion is not adequate to meet the country’s HRH requirements. As of 2016, only 68% of the positions provided on the approved establishment are filled, resulting in a continued shortage of health staff across all cadres. Approximately 10% of Zambia’s health workforce is lost each year to attrition. Zambia has about 1.2 physicians, nurses, and midwives per 1000 population, which is significantly below the WHO’s recommended threshold of 4.45 per 1000 population (28). The WHO recommends a ratio of 2 medical doctors and 14.3 nurses per 1,000 population as a minimum to achieve the health-related MDGs. The Zambian ratios of 0.07 medical doctors and 0.6 nurses per 1,000 population are of extreme concern (29). There are also regional and geographical inequalities with the distribution of core health workers skewed towards urban areas. In rural areas, there is an imbalance in the skills mix, particularly for doctors who are in short supply, which is compounded by the poor retention of health workers. Fiscal constraints impose restrictions on the extent of the number of health workers employed annually. The availability of tracer medicines was estimated at 78% at public health facilities which is lower than the availability at private health facilities (83%) (30). In general, Zambia inadequately funds infrastructure development, procurement of medical equipment, and equipment maintenance. As a result, utilization of services is low, with the hospital bed occupancy rate declining from 50 percent to 35 percent over the last decade. The routine maintenance of existing infrastructure and equipment is almost non-existent at all levels of health facilities due to low budget allocation. Currently, there is an uneven distribution of hospital facilities, with urban areas being disproportionately favored compared with rural areas. In 2014, 46% of rural households in Zambia still lived outside a radius of 5km from a health facility, compared to only 1% of urban households. However, even within urban areas, health facilities are often congested, which is also a barrier to access.

Health Expenditure Review

Between 2017 to 2019, Zambia’s health expenditure averaged 7.1%, making it the fourth largest expenditure priority of the government. However, this is significantly below the Abuja target of allocating at least 15% of the country’s annual government budget to the health sector. In relation to GDP, government health spending averaged 2.0% over the same period, which is comparable to its regional peers like Malawi, Zimbabwe, and Tanzania, but it still falls short of the WHO target of allocating at least 5% of the national GDP as public financing for health to achieve UHC. Zambia spends relatively more public resources on health per capita (28 US$) compared to its regional peers, except Zimbabwe (Table 3 below). However, this also remains below WHO’s minimum per capita investment (US$86).

Table 6: Government Health Sector Spending in Zambia and Comparator Countries, Average 2017-19
<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita GGHE-D (Current US$)</th>
<th>GGHE-D as a % of GDP</th>
<th>GGHE-D as a % of total government expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambia</td>
<td>28.2</td>
<td>2.0%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Malawi</td>
<td>9.3</td>
<td>2.4%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>30.4</td>
<td>2.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>8.4</td>
<td>1.7%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>15.9</td>
<td>1.6%</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

Source: WHO GHED 2021; National Health Accounts (NHA)

Findings from the recent public expenditure review (31) reveals that in 2016, Zambia’s total current health expenditure (CHE) in the economy was at 4.5% of GDP and was comparable to average spending (4.1%) in other LMICs in Sub-Saharan Africa but below the regional average of 5.4 percent for Sub-Saharan Africa countries. The total CHE per capita fell from US$90.33 in 2013 to US$58.9 in 2016, which is below the average for LMICs around the world (US$82) and the regional average for Sub-Saharan African countries (US$85). Between 2013 to 2016, the government\(^6\) contributed, on an average, 41% of the total CHE in the country, while cooperating partners (donors) contributed 42%. Households contributed the third-highest share at 12.4% of total CHE; meanwhile, contributions from employers accounted for 5%. In a nutshell, this signifies considerable reliance on donors to finance the health sector in Zambia. The majority of the donor funds in the health sector in Zambia are off-budget. On-budget donor expenditure on health as a share of total donor spending in the health sector (total donor CHE) was about 24% on average from 2011 to 2016. Household contributions were in form of out-of-pocket (OOP) spending for medicines (54%), followed by ambulatory health services\(^7\) (23%) and other expenditures (23%) at public and private hospitals. At around 12% of total CHE, OOP spending on health in Zambia is lower than in several countries in Africa.

Infectious and parasitic diseases account for more than half of total CHE, whereas other major disease categories and conditions like reproductive health and NCDs account for about 9% of CHE each between 2013-16. HIV/AIDS accounted for the largest proportion of CHE (at 33%). Results from the NHA (32) reveal that over 2015-16, most (on average 70%) of the funding for HIV/AIDS was provided by donors, while the Zambian Government was the second-largest financier. Malaria accounted for the second-largest share after HIV/AIDS, at 15% of CHE on average between 2013-2016. The other major diseases and conditions on which significant amounts were spent include maternal conditions (5%); vaccine-preventable diseases (4%); oral diseases (4%); injuries (3%); and respiratory infections (3%). During the entire period 2013−2016, expenditure on TB accounted for less than 1% of total CHE, while expenditure on nutritional deficiencies was about 1 percent. Given that the burden of disease due to maternal conditions, TB, and nutritional deficiencies are very high in the country, low levels of spending in these areas are concerning.

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\(^6\) General government health expenditures (domestic sources)
\(^7\) Outpatient services
More than 50% of the health resources were managed by government entities between 2013 to 2016, with the MoH managing the largest share of CHE resources (36.5% on average) over the period 2013 to 2016. The amount spent by different levels of the health system shows that hospitals account for 31% of total CHE, followed by ambulatory care (18%) and preventive care (17%) during the period 2013-2016. CHE by the MoH is concentrated at the primary healthcare level, followed by first and third-level hospitals, and then healthcare administration. The proportion of CHE allocated to curative care is the largest and has progressively increased from 30% in 2013 to 53% in 2016. Within this, the share of total CHE on outpatient care was more than twice the amount spent on inpatient care in 2015 and 2016. While the share of CHE spent on outpatient care increased from 19% to 37% between 2013 to 2016, the share of preventive care declined from 30% to 26%. The share allocated to administration activities has largely been stable over the four-year period averaging around 10 percent of total CHE.

The bulk of the public expenditure on health is generated from domestic sources, which was on an average 82% of the total public expenditure on health over 2006–2016, while cooperating partners (donors) contributed 18%. Expenditure on personal emoluments (PE) in the health sector as a share of the total public expenditure on health has increased significantly from 25% in 2006 to 62% in 2016. Further, the health wage bill as a share of the total public sector wage bill increased from 9% in 2006 to 14% in 2016. The share of expenditure devoted to PE in the health sector in Zambia is above the norms in other LMICs and sub-Saharan Africa, which is 45% and 40%, respectively. The rising spending on PEs in the health sector leaves little room for infrastructure development, procurement of medicines, vaccines, and other medical supplies, and provision of outreach services. Despite a substantial increase in public expenditure on drugs and medical supplies, the level of spending is still low, and the availability of drugs at public health facilities is erratic. Public expenditure on drugs and medical supplies as a share of the total public expenditure on health increased significantly from 3% in 2006 to 16% in 2016 but is still lower than the African regional average of 33%. The government was the main contributor to capital expenditure between 2013-16, contributing about 73% of the total on average annually. The government contribution increased from 56% to 70% of total capital expenditure between 2013-2016. Donor capital contribution fluctuated from 44% in 2013 to 30% in 2016, reaching a low of 9% in 2015. Public expenditures on capital items (including the procurement of new assets/buildings, rehabilitation, and maintenance) as a share of the total public expenditure on health were about 8% on average per year from 2006 to 2016. During the period 2013–2016, the largest two components of capital expenditure have been investments in infrastructure (71%) and machinery and equipment (29%), with most of the expenditure incurred at hospitals with an allocation of 68% in 2016.

A large share of public expenditure on health in Zambia is dedicated at the district level. Expenditure at the DHO (which includes district hospitals) as a share of the total public expenditure on health was 35% on average per year between 2006 to 2016, except for 2013, when it was 16%. In 2016, expenditures at the district level were 40% of total public expenditure on health in Zambia. There is a very high variation in health expenditures across districts, and this variation has been increasing over time.

**Zimbabwe**

**Socioeconomic Context**

Zimbabwe is a landlocked country in the southern part of Africa comprising 10 administrative provinces (8 rural and 2 metropolitans), which are further divided into 63 districts. The population of Zimbabwe was
estimated to be 14.6 million in 2019 with an average annual growth rate of 1.6% in the past decade (8). About 68% of the population lives in rural areas compared to 32% in urban areas. Agriculture, mining, and services are the main pillars of the Zimbabwean economy. In Zimbabwe, 52% of the population are female, and 48% are male, with life expectancy at birth estimated at 61.5 years (8). The total fertility rate has declined from 4.3 in 2014 to 3.9 per woman (33). As per the census, about 15% of the population are under-five years, 58.3% are above 15 years, and 4% are aged 65 years or older. Categorized as a lower-middle-income country, Zimbabwe’s per capita GDP is estimated at US$1414.8, with a decline of real GDP by 6% in 2019. As many as 16% of Zimbabweans were unemployed by 2019, and 76% were employed in the informal sector (34). Between 2017 to 2019, the general poverty rate rose from 43% to 51%, and extreme poverty rose from 30% to 38%, with higher rates in rural areas compared to urban. Income inequality, as measured by the Gini coefficient, rose from 0.45 in 2017 to 0.50 in 2019 (35). Literacy is higher among men (97.9%) than women (96.9%) (34).

Table 7: Key Socioeconomic Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>14.6 Million</td>
</tr>
<tr>
<td>GDP per capita (constant 2015 US$)</td>
<td>1414.8</td>
</tr>
<tr>
<td>% Rural Population</td>
<td>67%</td>
</tr>
<tr>
<td>% of employed in informal sector</td>
<td>76%</td>
</tr>
<tr>
<td>Total Fertility Rate</td>
<td>3.9</td>
</tr>
<tr>
<td>Life expectancy rates, total in years</td>
<td>61.5</td>
</tr>
<tr>
<td>Adult Literacy Rate (LFS 2019)</td>
<td>97.4%</td>
</tr>
</tbody>
</table>

Source: Labour Force Survey (LFS) 2019; Zimbabwe National Statistical Agency (ZimStat); MICS 2019; WDI 2021

Health Status

Since 2010, Zimbabwe has made significant strides in improving its health outcomes; however, the magnitude of progress is low and it did not manage to meet the health-related MDG goals. While there has been a decrease from 614 deaths per 100,000 live births (36), MMR is still high at 462 deaths per 100,000 live births (33). The MMR decline is not commensurate with the significantly high ANC coverage (93.3%), institutional delivery (85.5%), and skilled birth attendance (86%) (33). All early childhood mortality rates improved over the same period, except for NMR, which increased from 29 deaths per 1,000 live births to 32 in 2019. However, IMR and U-5MR are still unacceptably high at 47 and 65 deaths out of 1,000 live births,

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8 Based on lower bound poverty line
9 At least once by skilled health provider
respectively (33). Quality of care remains a critical issue, as can be seen from the prevalence of high mortality rates among mothers and children. While Zimbabwe’s maternal and child outcomes (except NMR) are better than the average for the region, they are worse than the average in its income group (8). Zimbabwe’s health system seems to have done well in terms of child immunization rates (69.2% in 2014 to 84.5% in 2019); however, lower respiratory infection, protein-energy malnutrition, malaria, and diarrhea remain the major causes of child morbidity and mortality in the country (12). Care-seeking behavior for diarrhea and fever for under-5 children is only 35.2% and 34.5% respectively (33). Micronutrient deficiencies are a major contributing factor to stunting, poor health, and impaired development among children in Zimbabwe. Multiple Indicator Cluster Survey (MICS) 2019 findings show that 24% of children are stunted, 3% are wasted, and 10% are underweight. Poor water and sanitation are intricately linked to the disease burden and are among the top four risk factors contributing to death and disability in Zimbabwe. Basic water and sanitation coverage stand at 64% and 37%, respectively.

**Table 8: Key Health Outcome Indicators**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Zimbabwe</th>
<th>Avg LMIC</th>
<th>Avg SSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMR per 100,000 live births)</td>
<td>614</td>
<td>462</td>
<td>253</td>
</tr>
<tr>
<td>IMR (per 1,000 live births)</td>
<td>55</td>
<td>47</td>
<td>35</td>
</tr>
<tr>
<td>NMR (per 1,000 live births)</td>
<td>29</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>U-5 MR (per 1,000 live births)</td>
<td>75</td>
<td>65</td>
<td>46</td>
</tr>
<tr>
<td>Prevalence of HIV, total (% population ages 15-49)</td>
<td>14.3</td>
<td>12.4</td>
<td>-</td>
</tr>
<tr>
<td>Incidence of tuberculosis (per 100,000 people)</td>
<td>278</td>
<td>199</td>
<td>209</td>
</tr>
<tr>
<td>Incidence of malaria (per 1,000 population at risk)</td>
<td>102</td>
<td>68</td>
<td>43</td>
</tr>
</tbody>
</table>

*Source: MICS 2014 & 2019; WDI 2021; UNICEF 2021*

Zimbabwe faces a double burden of communicable and non-communicable diseases. Communicable, maternal, neonatal, and nutritional diseases constituted a majority share of the disease burden in Zimbabwe and accounted for 58% of all DALYs and 53% of all deaths. HIV/AIDS, neonatal disorders, lower respiratory infection, TB, and diarrhoeal diseases constituted the top five causes of death and disability in 2019. HIV/AIDs accounts for the highest disease burden, estimated at 16.5%, and remains a significant public health problem in Zimbabwe, with HIV prevalence among adults at 12.7% in 2018 (37). The latest Zimbabwe Population-based HIV Impact Assessment (ZIMPHIA 2020) (38) estimated a prevalence of 11.8%, with higher rates among females (14.8%) than males (8.6%). The estimated TB incidence in 2019 was 199 per 100,000 population (39). The treatment success rate in 2019 was 84%, below the WHO target of 90%. Though TB incidence shows a steady decline, Zimbabwe remains one of the top 8 countries in Africa on the world’s top 30 list of countries heavily burdened by TB/HIV and MDR-TB (40). Malaria is among the top 10 causes of DALYs in Zimbabwe.
The annual incidence (cases per 1,000 population at risk) has decreased substantially over the last 15 years, from 102 in 2014 to 68 in 2018. The burden of non-communicable diseases (NCDs) is rapidly increasing and compounded by limited investments to prevent and control them. In 2019, it was estimated that NCDs account for 38% of the total deaths and 33% of DALYs in Zimbabwe (12). Cardiovascular diseases accounted for 15% of all NCD deaths, followed by cancers at 10%, diabetes and kidney diseases at 4.5%, digestive diseases at 3.5%, and chronic respiratory diseases at 2%. Ischemic heart diseases, stroke, and diabetes mellitus are among the top 10 causes of death in Zimbabwe. Additionally, injuries caused 9% of total deaths in 2019, with road injuries emerging as the top cause constituting 2% of all deaths.

Health Sector Profile

Zimbabwe assumed the Primary Health Care approach in 1980, and its health system is structured accordingly. In Zimbabwe, health services can be accessed through several platforms like public facilities, non-profit facilities, religious/mission organizations, and the private sector. The public sector is a major provider of health services and comprises the Ministry of Health and Child Care, Ministry of Defense, Ministry of Justice and Legal Affairs, Ministry of Local Government, Public Works, and National Housing and Mission Health Services. The health system has a five-tier structure, fundamentally based on the referral system, bottom to the top and top to bottom. The first and the lowest level form primary care (health centers/clinics/rural hospitals), followed by secondary care (district hospitals/municipal referral hospitals), then tertiary care (provincial hospitals), quaternary care (specialist inpatient services), and the highest and the newest level called quinary care (research and development). Mission and private sector facilities provide considerable services mostly in rural and urban areas, respectively. Currently, there is a defined essential health package for community level, primary and secondary levels of care.

Based on the Zimbabwe Human Resources for Health Profile (2014-2018) (41) the total public and private sectors’ health workforce in December 2018 were 80,457. Of these, there were an estimated 2,025 doctors, 33,124 nurses, and 1,125 midwives in Zimbabwe. Collectively, this implied a ratio of 2.45 skilled health workers for every 1,000 people. Though this was a significant increase from 1.70 in 2014, this ratio still falls short of international targets such as the WHO’s 2016 estimate that 4.45 skilled health workers per 1,000 people are required to achieve effective delivery of universal health care and the health-related Sustainable Development Goals. With 0.14 doctors per 1000 people and 2.3 nurses and midwives per 1,000, Zimbabwe performs well compared to its peers like Zambia and Malawi but falls short of the WHO target of 2 medical doctors and 14.3 nurses per 1,000 population as a minimum to achieve the health related MDGs. 75% of health workers are in the government public sector, while 17% are in the private sector, and 6% are in the faith-based and not-for-profit sectors. The reported vacancy rate for all public sector health workers was 15% in 2018, with the attrition rate among nurses having significantly increased after 2019. Since 2019, the country has witnessed one of the longest strikes by health personnel over poor working conditions, which nearly crippled the health sector (UNICEF Health Budget Brief 2020). Thus, in Zimbabwe, HRH remains the most considerable risk to UHC and sustainability of health outcomes. The Zimbabwe Service Availability and Readiness Assessment survey (42) found that the health facility density for Zimbabwe is 1.1 health facilities per 10,000 people and the national inpatient bed density is 18 per 10 000, which is well below the country’s target of 2 health facilities and 25 in-patients per 10,000 population. The general service readiness index was at 78%, while the mean availability of essential medicines and basic equipment was estimated at 75% and 78%, respectively. Overall, in Zimbabwe, there is low-capacity utilization (<30%), which impedes the delivery of quality health care services.
Health Expenditure Review

From 2015 to 2020, there has been both a fall in Total Health Expenditure (THE) and a major shift in its composition, with donor spending becoming more important and both government and private health spending falling (43). THE per capita in Zimbabwe (103.8 USD in 2015) compares favourably with the sub-Saharan Africa average (84 USD). Overall, government health spending as a proportion of total government expenditure averaged 8.0% from 2017 to 2019. This is relatively lower than its regional peers like Tanzania and Malawi, which spend comparatively higher on health than Zimbabwe. However, this falls short of the recommended 15% Abuja Declaration Target. In relation to GDP, government health spending forms 2.0% of GDP, which is far below compared to the WHO target of 5%. In per capita terms, the government sector health spending (30$) in Zimbabwe is the highest compared to its regional peers; however, it is far below the WHO minimum per capita investment of 86$.

Table 9: Government Health Sector Spending in Zimbabwe and Comparator Countries, Average 2017-2019

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita GGHE-D (Current US$)</th>
<th>GGHE-D as a % of GDP</th>
<th>GGHE-D as a % of total government expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimbabwe</td>
<td>30.4</td>
<td>2.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Zambia</td>
<td>28.2</td>
<td>2.0%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Malawi</td>
<td>9.3</td>
<td>2.4%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>8.4</td>
<td>1.7%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>15.9</td>
<td>1.6%</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

Source: WHO GHED 2021; National Health Accounts (NHA)

Since 2014, health financing has comprised a mix of domestic and external resources. In 2015, out of the THE, 31% was contributed by the government, 23% by Development partners (DPs), 24% by private corporations, and 22% by households (43). The decline in national health spending between 2016 and 2019 was mainly due to a challenging macroeconomic environment attributed to both increasing inflation and depreciating local currency. In these years, external financing contributed an unsustainably huge proportion (64% on average) of the health sector financing (44). DP funding levels have been both volatile and difficult to predict despite extensive mapping resource exercises since most of it is off-budget, and all is off-treasury. OOP health spending fell below 10% in 2018, which could be due to the high proportion of Zimbabwe’s health spending by private insurance companies (16-25%).

Government spending on health is predominantly managed by the Ministry of Health and Child Care (MoHCC). For 2017-18, the proportion of total government spending on health that was managed by the MoHCC averaged 58%, whereas around 16% of government health expenditure is managed by local councils. In 2017, the MoHCC adopted a new program-based budget (PBB) structure. By program, the MoHCC’s spending from 2017 to 2019 was predominantly focused on hospital services (74%) and, to a lesser extent, on rural health centers and community care (10%). The potential lack of emphasis on primary care in MoHCC.
spending was somewhat counterbalanced by DP spending being much more heavily focused on primary health care. In 2020, there was a large proportional increase in MoHCC spending on the communicable disease sub-program (from 1% to 22%) and a relative decline in the proportion spent on hospital services. This large increase in centrally managed communicable disease funding reflects the country’s national response to the COVID-19 pandemic. Due to this, the funding for many sub-programs has also been crowded out by the increase in COVID-19-related spending.

MoHCC spending has heavily prioritized curative care services (87% in 2020) over preventive care for an extended time period. On the other hand, for DP spending, it shows the share for preventive care is much higher than government spending alone (where the breakdown is available). Employment costs are by far the most dominant category of MoHCC spending. From 2013 to 2019, employment costs represented an average of 84% of all MoHCC spending, peaking at 91% in 2016. DPs have tended to provide only a very small proportion (7%) of their funding to cover payments for health workers. As a share of MoHCC and DP spending combined, payments to health workers fell from 41% in 2017 to just 25% or 19% in 2019 (depending on official or effective exchange rates). Medical supplies and services averaged 3% of MoHCC spending from 2013 to 2016 but reached 8% in 2017 and 10% in 2019. Non-wage support to hospitals and health centres trebled in relative terms from 3% in 2017 to 9% in 2019. Capital spending also jumped from an average of 2% from 2014 to 2017 to an average of 6% from 2018 to 2019. However, maintenance spending progressively declined from 0.3% of MoHCC spending in 2013 to 0.1% in 2015 and remained at that level up to 2020.

There is a lack of comprehensive infrastructure or equipment inventories or maintenance plans in the sector.

Zimbabwe’s disease burden has long been dominated by HIV/AIDS, and this remains a high priority for Zimbabwe’s health spending. As most government spending is not broken down by disease area, it is difficult to establish how well government spending reflects the current disease burden; however, HIV/AIDS represented 78% of all spending in 2017. For DPs, HIV/AIDS remained a high priority, with 68% of total DP spending allocated to it in 2018. DP spending data are broken down by disease, and in 2018, 80% was spent on HIV, 9% on malaria, 4% on TB, 3% on RMNCH, and 3% on all other diseases (45). Funding for RMNCH remained relatively constant up to 2019 but has become increasingly dependent on DP resources. Despite the rising NCD-related disease burden, NCDs received less than 1% of total funding available in the country (46).

Geographically, the national resource mapping data on spending by province shows that per capita spending on Harare and Bulawayo substantially exceeds spending on all other provinces. Bulawayo (82.4$ per cap) received almost four times more than Harare (22.7$ per capita) and around eight times more than the average for all other provinces (10.7$ per capita). This is mainly because Harare and Bulawayo urban councils provided far more funding than all rural councils combined. Rural provinces depend much more on volatile external funding than urban provinces. DP spending makes up just 12% of health spending in the urban provinces of Bulawayo and Harare but 54% in all other provinces. With limited central government or local council funding to compensate, cuts in external funding for rural provinces may have a devastating effect on the provision of health services in local communities.
Eswatini

Socioeconomic Context

Eswatini, formerly Swaziland, is the last absolute monarchy in Africa. It is a landlocked country in Southern Africa and is divided into four administrative regions, namely: Hhohho, Manzini, Lubombo, and Shiselweni. These are further divided into 55 local authorities (Tinkhundla) and 365 chiefdoms. It had an estimated population of 1.09 million as of 2017, with an average growth rate of 0.7% between 2007-2017 (47). About 76.2% of the population lives in rural areas compared to 23.8% in urban areas. Eswatini has a relatively diverse economy dominated by the agriculture and manufacturing sector. In Eswatini, 51.4% of the population are females, and 48.6% are male, with a life expectancy at birth estimated at 60.5 years in 2019 (8). As per the census projections, around 11.9% of the population are under-five years, 59.88% are between 15 to 64 years, and 4.49% are aged 65 years or older. The total fertility has declined from 3.3 in 2013 to 3.0 in 2017 (12). Eswatini is a lower-middle-income country, with a GDP per capita of approximately USD 4,105.9 in 2018 and an average GDP growth rate of 2.4% (8). While the national poverty rate has fallen in recent years (from 63 percent in 2010 to 58.9 percent in 2017), it remains very high, with 20.1% living in extreme poverty (48). At over 23%, unemployment is very high, with 54.3% of the population employed in the informal sector (49,50). Income distribution is highly skewed, with a Gini coefficient of close to 0.49. The literacy rate was 95.6% for women and 96.5% for men in 2017 (51).

Table 10: Key Socioeconomic Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1.09 million</td>
</tr>
<tr>
<td>GDP per capita (constant 2015 US$)</td>
<td>4105.9</td>
</tr>
<tr>
<td>% Rural Population (Census 2018)</td>
<td>76.2%</td>
</tr>
<tr>
<td>% of employed in informal sector</td>
<td>54.3%</td>
</tr>
<tr>
<td>Total Fertility Rate</td>
<td>3.0</td>
</tr>
<tr>
<td>Life expectancy rates, total in years</td>
<td>59.4</td>
</tr>
<tr>
<td>Adult Literacy Rate</td>
<td>96%</td>
</tr>
</tbody>
</table>

*Source: WDI 2021; CSO Census 2017; GBD 2019*

Health Status

Health outcomes remain a serious challenge for children in Eswatini. Though the 2017 Population Census revealed that both IMR and U5MR declined between 2007 and 2017, the IMR stands at 53 deaths per 1,000 live births, and the U-5MR that stands at 74 deaths per 1,000 live births. Also, despite increased access to
antenatal care (76% for at least four visits) and women delivering in health facilities (88%) (52), maternal mortality currently stands at 452 per 100,000 live births, and neonatal deaths are estimated to be as high as 20 per 1,000 live births. Beyond the neonatal period, mortality among under-five children is driven by diarrhea (13.5% of under-five deaths), lower respiratory infections (17%), HIV (11%), and protein-energy malnutrition (4.4%). In Eswatini, immunization coverage is around 71%, and stunting and wasting are serious challenges in Eswatini, with around 25.5% of children under 5 stunted and 5.8% wasted. Inequalities in health outcomes and health care access persist; for instance, stunting is more prevalent in rural areas (27%) compared to urban areas (19%) and among children living in the poorest households (30%) compared to the richest households (9%). This indicates that a major priority area of Eswatini is maternal, neonatal, and child health and that concerted efforts are required to bring it down further. Young people continue to face dire challenges, including high teenage pregnancy (16%). Sanitation coverage has been decreasing over the years and is currently at 46%. Hygiene coverage is also very low (26%), and these have contributed to the high incidence of water and sanitation-related (faecal-oral) diseases (48). Faecal oral diseases are amongst the top five leading causes of morbidity in the country. Poor environmental conditions also lead to outbreaks of diarrheal diseases, especially among children under 5 years (53). Moreover, the GBD 2019 results show that intimate partner violence (IPV) has increased since 2010 and is among the top 10 causes of death and disability in Eswatini.

Table 11: Key Health Outcome Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Eswatini</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007*</td>
</tr>
<tr>
<td>MMR per 100,000 live births)</td>
<td>589</td>
</tr>
<tr>
<td>IMR (per 1,000 live births)</td>
<td>100</td>
</tr>
<tr>
<td>NMR (per 1,000 live births)</td>
<td>-</td>
</tr>
<tr>
<td>U-5 MR (per 1,000 live births)</td>
<td>146</td>
</tr>
<tr>
<td>Prevalence of HIV, total (% population ages 15-49)</td>
<td>28.8</td>
</tr>
<tr>
<td>Incidence of tuberculosis (per 100,000 people)</td>
<td>1430</td>
</tr>
<tr>
<td>Incidence of malaria (per 1,000 population at risk)</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Source: #MICS 2014; ^UNICEF & WDI 2021; *2017 and 2007 Household Population Census

As per the 2019 Global Disease Burden estimates, communicable diseases are the leading cause of disease burden in Eswatini, accounting for 49% of all DALYs and 47% of all deaths. Within this, the top causes of death and disability are HIV/AIDS, lower respiratory infections, TB, and diarrheal diseases. HIV prevalence in Eswatini is one of the highest globally, at 27.4 percent (8). Though recent findings indicate a drop in new HIV infections by 44% since 2011 (54), HIV incidence continues to remain among the highest in the world. Moreover, Eswatini faces dual epidemics of TB and HIV, in which more than 80% of TB patients are HIV-
positive (55). Eswatini has been experiencing a continuous decline in the number of new and relapsed TB cases annually since 2010, with a more than 50% reduction rate between 2014 and 2017 (8). In 2017, the TB treatment success rate was low at 83% compared to the WHO target of 90%. Eswatini has made excellent progress in managing malaria and reached an elimination stage, although a small number of cases still pose a challenge (56). Eswatini is going through an epidemiological transition and experiencing a double burden of disease. Alongside communicable conditions, deaths due to NCDs increased from 26% in 2010 to 38% in 2019, with most NCD-related deaths linked to cardiovascular diseases (13%), cancers (10%), and diabetes and kidney diseases (9.4%) (12). Moreover, diabetes mellitus, stroke, and ischemic heart disease are among the top 10 causes of death in Eswatini as per GBD 2019. Findings from the 2014 Steps Survey (57) showed that 43.8% of the population was overweight while 20.5% was obese. In addition, adult prevalence of hypertension and type-2 diabetes—key risk factors for cardiovascular diseases—is 25% and 14%, respectively. Routine data showed that NCDs in 2017 accounted for 30% of the outpatient cases and 14% of the inpatient cases. Moreover, road injuries are also among the top 10 causes of death and disability in Eswatini.

Health Sector Profile

The Health Sector is governed by the National Health Sector Policy (2016-2026), and the MoH is responsible for national health-related administrative and executive functions. The country's healthcare system consists of the informal and formal sectors. The informal sector consists of traditional health practitioners and other unregulated service providers. In Eswatini, the health sector is highly decentralized, and healthcare services are delivered in both the private and public sectors. The public sector owns 39% of the health facilities and provides services through public, not-for-profit, faith-based, and industrial health facilities (clinics and outreaches, public health units, health centers, and hospitals), and community-based care (faith-based healthcare providers, rural health motivators and volunteers). Functionally, the public health system is decentralized from the central Ministry to Regional Health Offices (RHOs). Eswatini’s health system is based on a primary health care (PHC) approach, organized at five levels: Level 1 is at the community level, and Rural Health Motivators are the foremost service providers at this level. Level 2 comprises services provided at clinics, managed by nurses, and deals mainly with preventive services and basic curative services. Level 3 comprises health centers and provides both primary and secondary care. Level 4 is the regional hospital level, whilst level 5 comprises the national referral hospitals, which provide a wider scope of services, including tertiary services.

Overall, access to health workers is limited. In fact, Eswatini exhibits some of the lowest access rates to nurses and doctors in the region. Eswatini is among 57 countries classified as experiencing a critical professional healthcare worker shortage, with 1.66 midwives, nurses, and physicians per 10,000 population. This is far below the WHO benchmark of 44.5 skilled health workers per 10,000 population, as well as the target of 2.3 doctors per 10,000 population set by the NHSSP (2014-18). Around 1.46 nurses and midwives are available per 10,000 population, which also falls short of the NHSSP (2014-18) target of 2.4. There were 4642 established posts in the Ministry of Health as of 2019. Out of this total, 430 posts were vacant at the end of June 2019, which reflected a 9.3% vacancy rate. Across cadres, the vacancy rate was highest among medical and dental (18.7%), followed by allied (11.5%) workers and then nurses (4.2%). Moreover, the public sector is incapable of attracting and retaining specialists resulting in gaps in critical areas of healthcare delivery and an outdated skill mix (58). Competency, performance, and motivation among available health workers are a challenge due to insufficient funding for HRH training and development. As per Service Availability and Readiness Assessment (SARA) 2017 (59), the general service readiness index is only about 66%. There is an inadequate supply of quality essential medicines, medical supplies, blood and blood product, and vaccines due to
to poor forecasting and supply chain management. Only about 20% of tracer medicines were available, and 14.1% of facilities reported stock out of tracer medicines. The delivery of essential services is also hampered by a lack of functional equipment due to poor tracking of available equipment and their maintenance and repair needs. There has been a two-fold increase in the number of facilities in the last ten years for Eswatini, from 154 health facilities in 2006 to 327 health facilities in 2017. Whilst non-government-run facilities are more than government-owned facilities in numbers, a significant proportion of the population accesses health care services in government-run facilities. The distribution of health facilities is such that an estimated 88% of the population lives within an 8 km radius of a health facility. Hospitals have limited-service profiles, and the quality of health services is generally low (58).

Health Expenditure Review

Since 2010, Government health expenditure (GHE) has clearly made up the majority of THE, averaging 46%. GHE as a percentage of GDP is approximately 3.5%, as opposed to the WHO target of government Health Expenditure to be 5% of GDP to reach UHC. Eswatini spends less than some of its neighbours like South Africa and Botswana (see table 3 below) on health at 10% of total expenditure and currently does not meet the Abuja target of 15%. Eswatini’s GHE per capita is above the WHO recommended expenditure of 86$ for LMICs to make progress toward UHC and is significantly higher than some other countries in the region.

Table 12: Public Health Sector Spending in Malawi and Comparator Countries, 2018

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita GGHE-D USD*</th>
<th>GGHE-D as a % of GDP</th>
<th>GGHE-D as a % of total government expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eswatini</td>
<td>144</td>
<td>3.5</td>
<td>10.0</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>45</td>
<td>2.8</td>
<td>8.7</td>
</tr>
<tr>
<td>Lesotho</td>
<td>59</td>
<td>5.1</td>
<td>9.4</td>
</tr>
<tr>
<td>Botswana</td>
<td>370</td>
<td>4.7</td>
<td>14.3</td>
</tr>
<tr>
<td>South Africa</td>
<td>323</td>
<td>5.1</td>
<td>15.3</td>
</tr>
</tbody>
</table>

Source: WHO GHED 2021; *Current USD

NHA study (2017-18) (56) findings revealed that Eswatini’s THE per capita for 2017-18 was 322.5 USD, which constituted CHE of 299.89 USD per capita and capital health expenditure (HK) of 22.6 USD per capita. Regarding CHE, the government contributed the largest share at 47.6%, followed by Donors at 30.1%, Households at 11.6%, and Corporations at 10.7%. This shows that in Eswatini, government finances control the majority of CHE, and the health system will suffer greatly if they encounter fiscal challenges. Moreover, donors continue to play a large role as they manage 28.9% of CHE through Not-For-Profit Institutions Serving Households (NPISHs). However, the majority of the donor financing is off-budget and is not known to the government. Around 84.5% of household expenditure was OOP, and 15.5% was on voluntary health care prepayment schemes. The OOP expenditure on health at 9.8% of CHE can be considered fair compared to the
10% threshold recommended by the World Bank, above which households are considered to be at risk of catastrophic health expenditure. User fees in Eswatini account for the majority of the OOP expenditure. Lastly, private health insurance accounts for 10.1% of CHE but only covers an estimated 50,000 people, which is only 4.5% of the population.

Government institutions, especially MOH, had the most prominent role in managing healthcare resources. The MOH managed 45.4% of CHE, while other government institutions managed 2.21% of CHE. The majority of CHE is spent on curative care and tertiary health care services. Estimates show that in terms of spending by healthcare providers, hospitals and health centres spent the most significant share at 37.2% of CHE. This is followed by health system administration at 16.2% of CHE and is due to having partner support that targets health systems improvement. Providers of medical support services account for the third-largest share at 14.8% of CHE, while outpatient care providers (mainly clinics) and preventive care spent 11.6% and 7.9% of CHE, respectively. With respect to healthcare functions, 47.5% of resources were channelled towards curative services, followed by preventive care at 15.8% of CHE, then medical support services at 15.3% of CHE (mainly laboratory, imagery, and biomedical services). Governance, health system financing, and administration accounted for 14.3% of CHE. Even within the government sector, there is expenditure bias towards curative (59%) rather than preventative services (6.1%). Spending on rehabilitative care and chronic conditions accounted for less than 0.5% of CHE. While donors play a significant role in providing preventive care and services for chronic conditions in Eswatini, the private sector contributed significantly to providing rehabilitative care and medical goods.

In terms of spending by diseases, infectious and parasitic diseases accounted for the largest share at 48.7% of CHE, followed by NCDs at 28% of CHE, while injuries accounted for 6.5% of CHE. Given the rising burden of NCDs in the country, it is unsurprising to see NCDs take up the second-largest share of CHE. For children below 5 years of age, infectious and parasitic diseases consume 52% of the resources spent, followed by NCDs at 24%. For the age group of 5 years and above, infectious diseases lead their expenditure at 46% of CHE, while NCDs accounted for 31% of CHE. Overall, within infectious and parasitic, the majority of funding was directed towards HIV/AIDS and Other STDs (27%) followed by respiratory infections (6%) and TB (4.2%). Around 76% of the funding for HIV/AIDS came from partners, which is risky should those partners pull out. Cardiovascular diseases accounted for 9.9% of NCD funding, followed by cancers (3.5%). In Eswatini, expenditure by diseases seems aligned to the order of priority of the disease burden (see the section on health status).

Compensation for employees (salaries and allowances) took the largest share of CHE at 34.7%, followed by healthcare goods (18.1%), then healthcare services (14.3%). Further analysis shows that 42% of government healthcare expenditure comprises employees’ compensation, followed by donors who also spent the largest share (37.8%) on the compensation of employees. Capital Expenditure (HK) makes up only 7% of THE. Residential and non-residential buildings (facilities) accounted for 66.4% of HK, while spending on medical equipment, transport equipment, and machinery and equipment not elsewhere classified was 16.1%, 6.1%, and 5.0% of HK, respectively. The government was the major contributor (61% of the total) to medical equipment in Eswatini. Donors also played a major role (73.1%) in capital expenditure through external loans to finance capital projects.
Mauritius

Socioeconomic Context

Mauritius is a small island state located in the Indian Ocean, off the southeast coast of the African continent, with two tiny dependencies, namely, the Agalega Islands and the Cargados Carajos. It is considered to be the richest country in the ECSA region. The country had an estimated population of 1.27\(^10\) million in 2019 (60), with a negative growth rate of -0.01%. About 59.8% of the population lives in rural areas compared to 40.2% in urban areas. In Mauritius, 50.5% of the population is female, and 49.5% are male. Over the last thirty years, life expectancy at birth has increased from 65 years to 74.2 years in 2019 for both sexes. The total fertility rate has remained steady at 1.4 since 2013. As per the census, about 5.1% of the population are under-five years, 83% are 15 years or older, and 11.5% are aged 65 years or older. The country has steadily moved from a low-income agricultural-based economy to a diversified upper-middle-income economy, with a steady annual economic growth of over 3.5% over a period of two decades. The per capita gross domestic product (GDP) rose to US$10,644 in 2019, thus catapulting Mauritius into the high-income group of countries (8,61). The unemployment rate was at 6.7% in 2019 (62), with more than half of the population employed in the informal sector (see Table 1 below). It is estimated that 10.4% of the population were in relative poverty\(^11\) in 2017, with less than 1% living in extreme poverty (as per World Bank USD 1.90 (PPP) a day). Income inequality, as measured by the Gini coefficient, is 0.4 (63). Lastly, Literacy is higher among men (92%) than women (86.7%).

Table 13: Key Socioeconomic Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1.27 million</td>
</tr>
<tr>
<td>GDP per capita (constant 2015 US$)</td>
<td>10644</td>
</tr>
<tr>
<td>% Rural Population (NHS 2019)</td>
<td>58%</td>
</tr>
<tr>
<td>% of employed in informal sector (64)</td>
<td>53.5%</td>
</tr>
<tr>
<td>Total Fertility Rate</td>
<td>1.4</td>
</tr>
<tr>
<td>Life expectancy rates, total in years</td>
<td>74.2</td>
</tr>
<tr>
<td>Adult Literacy Rate (Census 2011)</td>
<td>89.2</td>
</tr>
</tbody>
</table>


\(^{10}\) Including the dependencies.

\(^{11}\) Mauritius does not have a national absolute poverty line. In its absence, the central statistics office uses relative poverty line which is set at half of the median monthly household income per adult equivalent.
Health Status

The Republic of Mauritius has already achieved some of the health-related SDG targets set for 2030. In 2019, the U-5MR was 16.0 per 1,000 live births compared to the global target of 25; the NMR per 1,000 live births was 10.3 compared to the global target of 12, and the MMR was 62 per 100,000 live births compared to the global target of 70. However, IMR, which was 12.1 in 2013, increased to 14.5 per 1000 live births in 2019 (60). These key health indicators for Mauritius are much lower than its peer countries like Botswana and South Africa, as well as the Sub-Saharan average, as shown in Table 2 below (11). With respect to health service utilization, the immunization rate in the country is more than 95%, and 99.8% of births are attended by skilled health personnel. The adolescent fertility rate (age group 15-19) decreased from 29.3 in 2010 to 22.4 in 2016. Even though the number of pregnant teens is on the decline, teenage pregnancy continues to be a significant issue facing families, schools, and the health of the teens and their babies.

Table 14: Key Health Outcome Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Republic of Mauritius</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
</tr>
<tr>
<td>MMR (per 100,000 live births)</td>
<td>66</td>
</tr>
<tr>
<td>IMR (per 1,000 live births)</td>
<td>12.1</td>
</tr>
<tr>
<td>NMR (per 1,000 live births)</td>
<td>9.1</td>
</tr>
<tr>
<td>U-5 MR (per 1,000 live births)</td>
<td>14.5</td>
</tr>
<tr>
<td>Prevalence of HIV, total (% population ages 15-49)#</td>
<td>1.7</td>
</tr>
<tr>
<td>Incidence^ of tuberculosis (per 100,000 people)*</td>
<td>10</td>
</tr>
<tr>
<td>Incidence^ of malaria (per 1000 people)</td>
<td>0.032</td>
</tr>
</tbody>
</table>

Source: *per 100,000 mid-year population ^Rate #UNAIDS; Global Health Observatory (GHO) WHO; WDI 2021

Mortality from infectious, parasitic, and water-borne diseases has dramatically decreased from 7% in 1976 to 2.8% in 2019 (65). Most vaccine-preventable diseases, water-borne diseases, and other communicable diseases are no longer a matter of critical concern for Mauritius (60). Mauritius has been declared a malaria-free country with the exception of imported cases (3.2 cases per 100,000 population as of 2019). The HIV prevalence is only about 1.7% in the population aged 15–49 (8). The number of new HIV infections per 1,000 uninfected population is low (1.33). In the case of TB, the incidence rate per 100,000 population is also very low (10 per 100,000). The healthcare system in Mauritius faces significant challenges due to the growing burden of NCDs, including their associated chronic conditions. They represent the bulk of morbidity,
disability, and premature deaths in Mauritius. As per GBD 2019, NCDs account for 89.8% of all deaths and 84.2% of DALYs in the country.

The top five causes of NCD-related deaths in Mauritius are diabetes, cardiovascular diseases, kidney diseases, neoplasms, and chronic respiratory diseases. Ischemic heart diseases and diabetes mellitus were the first two principal underlying causes of mortality, accounting for 15.5% and 17.7% of deaths respectively in 2019, followed by neoplasms (14%), chronic kidney diseases (11.8%), stroke (9.6%), and respiratory diseases (5%). Even overall, the most death and disability in Mauritius is caused by Diabetes, chronic kidney diseases, and ischemic heart disease.

In 2019, the top three risk factors driving death and disability in Mauritius were high fasting plasma glucose, BMI, and blood pressure, known to be closely associated with NCDs. The standardized prevalence of type 2 diabetes in the population aged 20-74 years was 20.5% in 2015, with a slightly higher proportion among women (21.3%) compared to men (19.6%). The NCD Survey 2015 also provides evidence-based information on the prevalence of hypertension, estimated at 28.4% - 27.0% for women and 30.3% for men. The country also witnessed an increasing trend of cancer incidence that has continued over the past years till 2016, with an age-standardized incidence rate of cancer among men at 124 per 100,000 and 155 per 100,000 among women. In 2018, the most frequently registered sites of cancer in males were prostate (21.4%), and among females, breast cancer was the most prevalent (40.1%). Moreover, mental disorders are becoming a growing area of concern in the country (65).

Health Sector Profile

Mauritius has a dual-tiered system of healthcare services, comprising a government-led and funded public sector, and a thriving private sector. Based on a total per capita expenditure on health of Rs 20,483 (US$589), the country has one of the most expensive healthcare systems in the Africa Region. Around 73% of the healthcare needs of the population are managed, free of any user cost, at the point of use, in the public sector. The remaining 27% of healthcare needs are dealt with in the private sector, on a user fee basis, either through out-of-pocket payments, including deductibles, or payments effected by private health insurers.

Healthcare within the public sector is delivered around a well-delineated three-tier system, namely primary, secondary and tertiary care. At the apex of the healthcare delivery system are specialized hospitals (4), medical centers (2), regional hospitals (5), and district hospitals (2). These function as the last referral centers for a decentralized network of primary healthcare facilities, which encompasses community hospitals (2), Mediclinic (6), area health centers (19), and community health centers (114) within a defined demarcated area and population. Each of these peripheral healthcare delivery points, comprising the Primary health care (PHC) network, is located within a radius of 3–5 km of the residence of people while catering to 9000 members of the community on average (61,65). In 2019, around 2 million medical consultations were carried out at the PHC level, representing 36% of total cases seen by doctors across all public health institutions. Services provided at the primary care level include prevention and treatment of common diseases and injuries, basic emergency services, disease prevention and screening, reproductive health, and rehabilitation services, whereas the secondary and tertiary care level provides general curative and specialized services. Within the private sector, the private hospitals are mainly providers of curative and specialized services, and their role in promoting Mauritius as a medical tourism hub is noteworthy. The number of private hospitals increased from 12 in 2005 to 19 in 2019 (60), and the bed capacity in the sector, which was 517 in 2005, improved to 730 in 2019.
In 2019, an estimated 16000 officers were employed by the Ministry of Health and Wellness (MoHW). During the same year, there were 3,290 doctors, out of whom 1568, including 354 specialists, were working in the public sector. The number of doctors per 10,000 population was 26 in 2019. As far as dual practice is concerned, 299 specialists working in the public sector were allowed to undertake private practice in 2017. 536 pharmacists were registered in 2019, out of whom only 36 were working in the public health institutions, and 500 were practicing in the private sector. The number of pharmacists per 10,000 population was 4.2. Qualified nurses and midwives at work in the public sector, in 2019 numbered 3,958 out of a total number of 4,494. For every 10,000 population, Mauritius has 35.5 Nurses/Midwives as compared to the WHO recommended ratio of 26.3 (2019). There were 3,768 beds in Government Hospitals at the end of 2019. Combining private and public sectors, the availability of beds in Mauritius stands at 36.8 beds per 10,000 population. Lastly, the percentage of the population with access to affordable medicines and vaccines on a sustainable basis is close to 100.

Health Expenditure Review

As per the National Health Accounts (2018) (66), Total Health Expenditure (THE) in the main island of Mauritius formed 98% of the total estimated amount spent on healthcare in the Republic of Mauritius (i.e., including the islands). In 2017, Total Health Expenditure, as a percentage of GDP, was 5.67%. Current health expenditure accounted for 97.6% of THE, while capital formation represented 2.4% of THE. Government spending on healthcare was 46.5% of THE. Out of the total government expenditure (TGE), government spending accounted for approximately 10%, far below the Abuja declaration of 15%. In relation to GDP, government spending was around 2.6%. The per capita public health expenditure in 2017 was estimated at US$268.3 in the Republic of Mauritius. Compared to its peer countries in the upper middle-income category, Mauritius spends relatively less public resources, as can be seen from Table 3 below. The Ministry of Health and Wellness is the main financing agent in the public sector, accounting for 88% of government health spending and 42.5% of CHE in 2017. They are followed by municipalities and district councils which account for 2.6% of CHE, the Ministry of Social Integration, Social Security and National Solidarity which spent approximately 0.7% of CHE, and other Ministries, which accounted for about 0.1% of CHE.

Table 15: Public Health Sector Spending in Mauritius and Comparator Countries, Average 2017-2019

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita public health(^{12}) spending USD</th>
<th>Public health spending as a % of GDP</th>
<th>Public health spending as a % of total government expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritius</td>
<td>293.1</td>
<td>2.6%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Seychelles</td>
<td>599.8</td>
<td>3.75%</td>
<td>10.2%</td>
</tr>
<tr>
<td>South Africa</td>
<td>316.6</td>
<td>5.1%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Botswana</td>
<td>377.6</td>
<td>4.7%</td>
<td>14.3%</td>
</tr>
</tbody>
</table>

Source: WHO GHED 2021; GHO WHO

\(^{12}\) GGHE-D (General Government Health Expenditure – Domestic)
Private Health Expenditure (PvtHE) as a percentage of GDP was 3.03% in 2017. The proportion of private healthcare expenditure was 53.5% of THE. The household OOP expenditure on health accounted for 83.5% of the total PvtHE and 46% of CHE in 2017. Private insurers paid 6.9% of CHE on behalf of people having private voluntary health insurance policies, private firms spent approximately 1.5% of CHE on health-related services, NGOs involved in healthcare activities spent around 0.3% of CHE, while spending by the WHO amounted to 0.15% of CHE. PvtHE in 2017, including expenditure by the WHO, was 0.82% lower than that in 2016. These estimates reveal that Mauritius is witnessing a relatively high amount of out-of-pocket (OOP) expenditure on health. There has been a fivefold increase in OOP expenditure on health per capita from US$61 in 2002 to US$293 in 2017, which corresponds to an increase in the share of OOPHE out of total household healthcare expenditure from 2.8% to 3.8% (67).

In 2017, the largest share of CHE, around 34.35%, was utilized for the funding of public hospitals, whereas healthcare expenditure incurred by private hospitals was approximately 12.5% of CHE. An estimated 2.6% of CHE was spent by state-owned primary healthcare institutions. Curative services provided in both public and private hospitals continue to use the largest share of healthcare spending, representing 59.5% of THE and 59.2% of CHE in 2017. An increase of 5.94% in expenditure on curative services has been noted from 2016 to 2017. Total spending on medications in 2017 accounted for 21.8% of CHE. In 2017, Mauritius spent around US$118 per person on medication, which is much lower than the United States, with a per capita spending of around US$1457 on pharmaceutical products. Besides, an estimated 3.12% of CHE was spent on preventive care in the Republic of Mauritius, 4% on governance, health system, and financing, 1.5% of CHE on rehabilitative care, and around 1% of CHE were spent on laboratory services.

NCDs, which constitute nearly 84.2% of DALYs in the Republic of Mauritius, represent the largest share (67.99%) of current health expenditure on diseases. From 2016 to 2017, spending on NCDs increased by 4.20%. About 21.2% of NCDs funding was spent on cardiovascular diseases, 7% on diabetes, 10.5% on diseases of the genito-urinary system, and 5.7% was spent on cancers 2017. Spending on chronic respiratory diseases accounted for 10.7%, whereas 7% was spent on mental and behavioral disorders, including neurological conditions. Approximately, 7.21% of CHE was spent on infectious and parasitic diseases in 2017, representing a decrease of 1.62% from 2016. Out of the total amount spent on infectious diseases, spending on HIV/AIDS and Other Sexually Transmitted Diseases (STDs) account for 6%, expenditure on respiratory infections was approximately 38.5%, while spending on diarrheal diseases was 26.5%. Other unspecified diseases, reproductive health services, injuries, non-disease specific, and nutritional deficiencies constituted 11.6%, 3.84%, 5.36%, 3.59%, and 0.44% of CHE, respectively.

In 2017, capital investment in the Republic of Mauritius accounted for 2.4% of THE. From 2016 to 2017, expenditure on capital experienced an increase of 26%. About 98.7% of capital expenditure is financed by the government, while corporations and NGOs financed 0.4% and 0.8%, respectively.

Chapter 3: Health and the macroeconomy in the ECSA countries

by Priscilla Kandoole and Paulo Santos Monteiro
Overview

This chapter provides contextual evidence on the recent macroeconomic and fiscal developments of Eswatini, Malawi, Mauritius, Zambia and Zimbabwe over the last decade. These are also described in relation to outcomes on health and incidence of poverty. A dynamic panel model with a macro-finance block and health block is thus considered. Specifically, a panel Structural Vector Autoregressive (SVAR) model is used to study how fiscal expenditure shocks in health and other sub-components of public sector expenditure affect health outcomes over a 20-year period from 2000 to 2020. The SVAR model includes infant mortality (under 5 mortality % births) as a proxy for health outcomes, as this is a variable which is likely to respond more quickly to changes in health expenditure and macroeconomic conditions compared to other more slow moving health outcomes, such as chronic diseases. Fiscal multipliers associated with different sub-components of public expenditure are identified. This allows construction of counterfactual scenarios regarding different fiscal policy plans and macroeconomic and health outcomes. The analysis is underpinned by a framework that establishes causal relationships between public expenditure, health and human capital dynamics, and macroeconomic outcomes.

Macroeconomic context

Eswatini

The past decade has seen a significant slowdown in Eswatini’s real gross domestic product (GDP), averaging 2.2 percent largely due to poor performance of exports and investment (see Figure 1.1). About 85% of its imports and about 60% of exports are from South Africa. The World Bank (2022) indicates that following the decline and relocation of foreign private investment to South Africa, the economy has largely relied on government investment and consumption to drive growth since the end of apartheid in South Africa. It further reports that private investment remains constrained by an unfavourable investment climate and governance challenges. Poverty and inequality remain widespread and a rural phenomenon. The Central Statistical Office reported that the poverty headcount at the national poverty line stood at 58.9 percent in 2016. The World Bank estimated that 28.6 percent of the population lived below the international poverty line of US$1.90 per day in 2020.

Eswatini is part of the Common Monetary Area (CMA) of the South Africa Customs Union (SACU)\(^{13}\), with South Africa, Lesotho and Namibia. The Lilangeni is pegged to the South African Rand and that is key to anchoring the policy framework and containing inflation which has remained in single digits in the past decade (see Fig 1.2). The CMA membership consequently limits the independent use of monetary and exchange rate policy instruments.

The global financial crisis in 2010 saw a sharp decline in SACU revenues triggering a fiscal crisis and a fall in international reserves. The Government implemented significant fiscal adjustment coupled with a recovery in SACU revenues there was an improvement in both fiscal and external balances in 2012 and 2013 (IMF 2020). Since then, the fiscal balance has remained in deficit as SACU revenues have been on a downward trajectory coupled with declining growth trends (see Figure 1.3). As SACU revenues continued to fall this led to a narrowing of the current account surplus fluctuating from about 13 percent in 2015 to around 1.3 percent in 2018 with a subsequent recovery to 6.7 percent in 2020 (see Figure 1.4).

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\(^{13}\) Botswana left the CMA but is still part of the SACU
The country has made some progress in reducing mortality rates albeit at a slow pace (see Figure 1.6). Infant mortality has fallen from 54.7 infants per 1,000 live births to 37.4 infants per 1,000 live births in 2020. Eswatini Government (2019) attributed this to the introduction of new vaccines and increasing immunisation coverage as well as stabilised in prevalence of HIV/AIDS, incidence of malaria and tuberculosis although the country is experiencing an increase in noncommunicable diseases. An analysis of the share of health
expenditure as a proportion of total expenditure shows that it has been volatile but stagnating at around 10 percent (see Figure 1.5), below the Abuja declaration\textsuperscript{14} target of 15 percent.

\textbf{Figure 1.5: Domestic general government health expenditure}
Percent of general government expenditure

\begin{figure}[h]
\centering
\includegraphics[width=0.45\textwidth]{figure1.5}
\caption{Share of health expenditure in total spending}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=0.45\textwidth]{figure1.5}
\caption{Food Inflation (y-o-y) and Non-Food Inflation (y-o-y)}
\end{figure}

\textit{Source:} Authors based on WEO data

\textbf{Figure 1.6: Infant Mortality}
Per 1,000 live births

\begin{figure}[h]
\centering
\includegraphics[width=0.45\textwidth]{figure1.6}
\caption{Infant mortality per 1000 live births}
\end{figure}

\textit{Source:} Authors based on WEO data

\section*{Malawi}

Malawi’s economy grew by an annual average of 4.0 percent over the last decade marked by high volatility in real GDP growth due to limited buffers against shocks (see Figure 2.1). Macroeconomic instability has been attributed to vulnerabilities to weather related shocks and weak public finance management. Most of the population, especially the poor, are involved in subsistence and rainfed agriculture which is riddled with low productivity. As a result, poverty levels have remained high with limited improvement in per capita incomes. The National Statistical Office reported that the poverty headcount at the national poverty line stagnated at 50.7 percent in 2019/2020. World Bank estimates based on the international poverty line of US$1.90 per day classify 74.3 percent of the population as being poor in 2020.

Although the country recorded single digit inflation for much of the 2000s, a devaluation of the local currency by 49 percent in 2012 saw inflation spike to over 20 percent. Containing inflation remained a challenge for at least 5 years, compounded by rise in food and fuel prices and previous monetary accommodation of fiscal indiscipline. A tight monetary stance ensued which contributed to a fall in inflation below double digits (see Figure 2.2). Consumer prices have recently been on an upward trajectory due to the impact of the COVID 19 pandemic and the war in Ukraine. Money supply rose in 2020 as authorities loosened monetary policy in response to the crisis.

\textbf{Figure 2.1: Real GDP Growth}
Percent

\begin{figure}[h]
\centering
\includegraphics[width=0.45\textwidth]{figure2.1}
\caption{Real GDP Growth}
\end{figure}

\textbf{Figure 2.2: Inflation and Broad Money Growth}
Percent

\begin{figure}[h]
\centering
\includegraphics[width=0.45\textwidth]{figure2.2}
\caption{Inflation and Broad Money Growth}
\end{figure}

\textit{14} A pledge made by African Union (AU) countries in 2001 to allocate at least 15 percent of the national annual budget towards the health sector
As Record et al (2018) report, fiscal outturns and performance have been masked with significant volatility. Fiscal indiscipline has led to large domestic borrowing requirements, crowding out private sector lending, and stoking non-food inflation. This has also undermined the effectiveness of monetary policy by restraining credit growth but with rising inflation. Financing such persistent fiscal deficits has also led to a growing share of public expenditure going towards servicing domestic debt at the expense of service delivery and public investment. The fiscal balance has continued to widen from a surplus of 0.6 percent in 2010 to around 8.1 percent in 2020 (see Figure 2.3).

Current account deficits stood at around 14 percent of GDP in 2020 (see Figure 2.4) with a continued increase in imports (including fuel, medical drugs and fertiliser) as proceeds from tobacco exports dwindled. The
International Monetary Fund (2021) noted that the Malawi Kwacha appreciated substantially in real effective terms owing to limited nominal exchange rate adjustment further contributing to high current account deficits and a loss of foreign exchange reserves.

The country has made impressive strides in reducing infant mortality from 2000 with the chance of survival tripling by 2020 (see Figure 2.6). The Government of Malawi (2022) has attributed this to child health interventions which have had a significant impact on child health outcomes. These include an increase in births attended by skilled health staff from about half to over 90 percent and a reduction in the incidence of malaria which is a leading cause of morbidity and mortality in children and pregnant women, among others. This corresponds to an increase in health expenditure as a share of the national budget from around 5 percent in 2010 to around 9 percent to date (see Figure 2.5). The overall spending to the health sector, however, remains low and below the Abuja target of 15 percent.

**Figure 2.5: Domestic general government health expenditure**
Percent of general government expenditure

**Figure 2.6: Infant Mortality**
Per 1,000 live births

Mauritius has been on a steady growth path averaging about 3.7 percent from 2010 to 2019, driven by the service sector in particular tourism, finance and Information Communications and Technology (ICT). In 2020, however, the economy contracted by about 14.9 percent bringing the average since 2010 to around 2.2 percent (see Figure 3.1). This was attributed to the COVID 19 pandemic which led to a sharp decline in services, particularly tourism (over a fifth of the economic activity). The country has witnessed steady, strong, and inclusive growth which has seen poverty levels based on the national poverty line stand at 10.3 percent in 2017. Extreme poverty is almost eliminated with 0.2 percent of the population living below the international poverty line of US$1.90 per day in 2017 according to World Bank estimates.

Low inflation has been sustained over the past decade remaining in single digits. Recent years have seen a rise in inflation owing to external supply shocks related to increased energy and food prices as well as higher freight prices (see Figure 3.2).
In the past decade, Mauritius has been struggling with reining in public expenditure which has seen the fiscal deficit widen, standing at 10.9 percent in 2020 (see Figure 3.3). The World Bank (2022) notes that the emergency response to the pandemic was effective at protecting livelihoods but it came at a high fiscal cost with a spike in public debt. This was despite a 12.6 percent of GDP non-refundable transfer from the Bank of Mauritius to the Government in FY2020/2021. It followed another 3.9 percent of GDP transfer in the budget of the preceding fiscal year.

The economy has run a structural current account deficit which narrowed to below 5 percent of GDP since 2015, driven mainly by the downcycle in investment (World Bank 2017). The sharp deterioration in tourism saw the current account deficit widen from 2019 reaching 12.5 percent in 2020 (see Figure 3.4).
From a rate of 16.6 deaths per 1,000 live births, Mauritius experienced a decline in infant deaths reaching a record low of 12.5 deaths per 1,000 live births in 2009. Over the years, the rate has fluctuated between 12 – 14 deaths recording 14.8 deaths per 1,000 live births in 2020 (see Figure 3.6). The Government of Mauritius (2019) identified the main causes as congenital anomalies, septicemia and infections specific to perinatal period. An analysis of the share of health expenditure as a proportion of total expenditure shows that it has increased from 8.3 percent in 2010 but has stagnated at around 10.2 since 2016 (see Figure 3.5). This is below the Abuja target of 15 percent.

Zambia

Zambia registered an average real GDP growth rate of 4.2 percent in the past decade. Growth was bolstered by high copper prices and production as well as expansion in construction and services. Declining copper prices compounded by macro-fiscal vulnerabilities saw a declining growth trend. In 2020, the economy contracted by 2.8 percent with the onset of the COVID 19 pandemic (see Figure 4.1). Consequently, poverty and inequality remain high. The Central Statistical Office (CSO) reported a poverty headcount of 54.4 percent in 2015 at the national poverty line. The World Bank estimates that 60.1 percent of the population is living below the international poverty line of US$1.90 per day in 2020.

Inflation remained in single digit between 2010 and 2014. In 2015 and 2016 there was an upward pressure on prices. Low commodity prices as the global demand for copper fell exacerbated by a drought which also led to a fall in hydropower generation affecting mining production leading to a depreciation of the Zambia Kwacha and fueling inflationary pressure. Although inflation returned to single digits between 2017 and 2019, the COVID 19 pandemic led to an increase in the inflation rate to 15.7 percent in 2020 (see Figure 4.2).
In the past decade, the fiscal deficit has widened from 2.4 percent of GDP in 2010 to 13.8 percent of GDP in 2020 (see Figure 4.3), financed by a mounting stock of domestic arrears and accumulation of non-concessional public debt. Although revenues have generally improved, the deficits have continued to rise following faster-than-budgeted execution of foreign-financed capital spending (IMF 2019).

The current account balance has largely been in surplus albeit modest deficits in some years. In 2020, the economy registered a current account surplus of 12 percent of GDP owing to a string recovery in exports that outpaced imports (see Figure 4.4)
Infant mortality has substantially fallen since 2000 from 90.2 deaths per 1,000 live births, reaching 51.2 deaths per 1,000 live births in 2010. By 2020, the country recorded 41.7 deaths per 1,000 live births (see Figure 4.6). The Government of the Republic of Zambia (2019) attributed this to interventions such as Safe Motherhood Action Groups, community-based distributors, procurement of emergency obstetric and neonatal care, and in-service training of skilled workers. A fall in the incidence of malaria (major cause of morbidity and mortality) also contributed to the success. Whilst the share of health spending relative to total expenditure has increased from 4.7 percent in 2010 to 7.0 percent in 2020 (see Figure 4.5), it remains below the Abuja target of 15 percent.

Zimbabwe

Zimbabwe’s economy has suffered from protracted fragility induced by recurrent cycles of political and economic crisis. The country is unique in that it has the characteristics of both a middle-income country and a typical fragile state. It has a solid backbone infrastructure and human capacity but has been drained of institutional capacity, especially in core government functions, service delivery to citizens, the private sector, and systems to resolve political and economic contests (World Bank 2013, p.2). Relative political stability, the adoption of a multi-currency regime, and economic reforms improved incentives for the private sector, generating a vigorous economic rebound in 2009 (World Bank 2013). Real GDP growth has been volatile owing to macroeconomic vulnerabilities and natural disasters compounded by governance challenges. The economy grew at an average of 5 percent in the last decade but experienced a sharp contraction in 2019 and 2020 largely as a result of climate related shocks and the COVID 19 pandemic, respectively (see Figure 5.1). In terms of poverty, the Zimbabwe National Statistics Agency (ZIMSTAT) reported a poverty headcount of 38.3 percent at the national poverty line in 2019. The World Bank estimates that 42.7 percent of the population is living below the international poverty line of US$1.90 per day in 2020.
The new Zimbabwe Dollar (introduced in 2019) lost most of its value with the country witnessing hyperinflation caused by printing of money for domestic financing of the budget. From 28 percent in 2018, inflation skyrocketed to 255.3 percent and 557.2 percent in 2019 and 2020 (see Figure 5.2), respectively. The situation was further exacerbated by the El Nino drought in 2019 and the pandemic in 2020.

The economy has generally faced persistent fiscal deficits (see Figure 5.3) financed by Reserve Bank of Zimbabwe (RBZ) money creation which have resulted in severe macroeconomic imbalances and market distortions. The country experienced a period of fiscal restraint, anchored on a strict cash budgeting framework, and robust growth which followed full dollarization in late 2008 but large deficits returned in 2016, financed by the RBZ. This ultimately forced the Government to abandon the dollarized system and adopt a new domestic currency in early 2019 (IMF 2020).
After years of large current account deficits as high as 19.5 percent of GDP in 2011, the balance began to narrow over the years. Although reserves remain critically low, surpluses of 4.0 percent of GDP in 2019 and 4.7 percent of GDP in 2020 were recorded (see Figure 5.4). The IMF (2020) attributed this to import compression from higher fuel prices, foreign exchange shortages, a sharp decline in real disposable income and declining terms of trade (since 2016) from falling tobacco prices and rising oil prices.

Progress has been registered in infant mortality from 52.1 deaths per 1,000 live births in 2010 to 37.9 deaths per 1,000 live births in 2020 (see Figure 5.6). The Government of Zimbabwe (2021) attributed this to progress made towards universal health coverage through sustained investment in public health infrastructure, equipment, capacitation of human resources for health, procurement and distribution of medicines and sundries as well as development and review of health related legal and policy frameworks. Although the country had met the Abuja target of 15 percent in 2010, there has been a decline in the share of health spending relative to total expenditure reaching 8.7 percent by 2020 (see Figure 5.5).
The Macroeconomy and Health Outcome: An Empirical Dynamic Model

In this section we introduce a dynamic panel model with a macro-finance block and health block to study how structural shocks to the macroeconomy, different sub-components of public expenditure (notably, health expenditure) and exogenous financial shocks jointly affect the macroeconomy and health outcomes in the short-run.\textsuperscript{15} The model we develop is a panel Structural Vector Autoregressive (SVAR) model, which is estimated jointly for Eswatini, Malawi, Mauritius, Zambia and Zimbabwe, using annual data over a 20-year period from 2000 to 2019.\textsuperscript{16}

The macroeconomic and aggregate fiscal variables included in the macro block of the SVAR model are real GDP growth and the change in total government expenditure as a share of GDP. In the health block of the model, we include health expenditure as a share of total government expenditure and the change in infant mortality (under 5 mortality \(\%\) births). This latter variable is chosen as our proxy for health outcomes because this is a variable which is likely to respond more quickly to changes in health expenditure and macroeconomic conditions compared to other more slow-moving health outcomes, such as chronic diseases. The panel SVAR model is estimated by OLS pooling together the data on all five countries. This is similar to, for example, Ravn et al. (2012) (68) who also propose a panel SVAR model to model the response of economic activity, inflation rates and real exchange rates using a panel of four industrialised countries.

The model we estimate is as follows:

\[
Y_{t} = a_{0} + \sum_{i=1}^{2} A_{i}Y_{t-i} + \varepsilon_{t}
\]

The model is estimated on stationary data and to achieve stationarity we consider the growth rate of GDP and the changes in the share of government expenditure and in infant mortality instead of their levels. Moreover, any deterministic trends are estimated and removed. In the equation above the vector of endogenous variables at date \(t\) for each country \(i\) is given by

\[
Y_{i,t} = [\Delta \text{real GDP \(\%\)} \quad \text{government expenditure share \(\%\)} \quad \text{infant mortality \(\%\)} \quad \Delta \text{government expenditure share \(\%\)} \quad \Delta \text{infant mortality \(\%\)}]
\]

The vector \(a_{0}\) contains the deterministic trend components and, possibly, additional exogenous variables. Specifically, an exogenous variable which we introduce in the model is a measure of stress in emerging market corporate bonds markets, as a proxy for exogenous external financial shocks. The number of lags included in the model set at \(k = 2\). Finally, \(\varepsilon_{t}\) denotes the vector of reduced form residuals which is given by a combination of the structural shocks.

The structural shocks are identified by ordering the variables such that government expenditure is entirely exogenous contemporaneously. Ordering government expenditure first follows the tradition in the empirical

\textsuperscript{15} The short-run is referring to business cycle and higher frequencies, with the typical business cycles corresponding to periodicities of 6 years.
\textsuperscript{16} A Vector Autoregressive (VAR) is an n-equation, n-variable linear model in which each endogenous variable is in turn explained by its own lagged values, plus current and past values of the remaining variables (262). When additional restrictions are imposed on the contemporaneous links among the variables (identification restrictions) we obtain a structural VAR, and it becomes possible to identify structural shocks.
studies of fiscal multipliers using VAR models (69), and is justified on the grounds that discretion ary response of fiscal policy to unexpected movements in economic activity are difficult over very short horizons. GDP growth is allowed to vary contemporaneously with the government expenditure shock and an economic activity shock and, finally, we identify a third structural shock to the share of expenditure in health as a share of total government outlays. Fiscal multipliers associated with different sub-components of public expenditure are identified. This allows construction of counterfactual scenarios regarding different fiscal policy plans and macroeconomic and health outcomes.

Empirical Results from the Panel SVAR

All the endogenous variables for each country included in the panel SVAR model are shown in the Figures in the Appendix A1. Some of the main trends described in Section 2 for each country are placed in evidence. However, we turn the focus to some of the short-run dynamics in the previous twenty years. In Eswatini (Figure A1.1) the deep fiscal contraction following the global financial crisis around 2010 is very salient. The fiscal retrenchment had a detrimental impact on the level of public investment in health spending, which also appears to have halted some of the progress which had been made in relation to health outcomes. This is evidenced by the dramatic slowdown in the rate of decline in infant mortality since 2010.

In Malawi, despite the aforementioned macroeconomic volatility, there have not been such dramatic fiscal contractions. Average GDP growth has been strong and at the same time, the share of expenditure in health as a share of total government outlays has increased. This has led to improvements in health outcomes, noticeably with regards to child mortality. Although there are concerns about fiscal capacity and fiscal space identified in section 2, there seems to have been a sustained effort to improve human development outcomes.

Until the covid 19 pandemic, Mauritius had enjoyed a stable macroeconomic outlook and had also achieved significant gains in relation to improving its healthcare sector with significant increases in health expenditure as a share of total government outlays. But the Mauritius economy which is especially dependent on international travel and its tourism industry has suffered since the 2020 pandemic started affecting the global economy and as a result it has lost fiscal capacity and is in a more fragile position compared to earlier years. Unfortunately, health outcomes have also deteriorated in the most recent years, despite the successful public health campaigns directed at protecting the population from the Covid epidemic.17

Zambia’s macroeconomic outlook has deteriorated since 2010 and the latter period of the decade have been characterised by substantial fiscal retrenchment and weak GDP growth. There were big improvements in health outcomes at the start of the century but these have also slowed in recent years.

Finally, Zimbabwe’s macroeconomic performance has been characterised by enormous volatility in the past 10 years. In 2019 and 2020 it experienced a deep recession which the IMF most recent consultation attributes to several exogenous shocks, including drought and the Covid epidemic.

Structural Impulse Response Functions

Next, we turn to the structural analysis based on the SVAR model and, in particular, look at the dynamic transmission of the three identified structural shocks: government expenditure shock, a GDP growth shock, and Health expenditure shock. This analysis is conducted using structural impulse response functions (IRFs) which show the accumulated response of the endogenous variable in the SVAR to each structural shock for an horizon of up to 10 years.

17 Mauritis’ vaccination campaign covered over 90 percent of the eligible population by May 2022.
The IRF are reported alongside the 50% confidence intervals, a justifiable size given the relatively small data and resulting low power of the statistical discrimination.

Figure 6 reports the IRFs corresponding to a government spending shock. A positive expenditure shock which over an horizon of 10 years raises the total government expenditure as a share of GDP by roughly 2.5 percentage points results in an accumulated change in GDP of roughly 1 percentage points. Thus, the long-run multiplier is estimated to be roughly equal to 0.28, which is in line with some of the consensus fiscal multiplier estimates available in the literature (70).  

The 2.5 percentage points increase in overall government expenditure as a share of GDP conditional on the exogenous expenditure shock is found to lower the share of expenditure in health as a share of total government outlays by roughly 1.5 percentage points. This finding indicates that the different subcomponents of public expenditures are rivalling sources of funding demands, suggesting an environment in which there are binding constraints on fiscal capacity and, thus, in which there are trade-offs confronting the public sector with regards to funding different components of the public sector, including the health sector. The fiscal shock also affects the change in child mortality in a direction which is detrimental to health outcomes, suggesting a connection between overall increasing government expenditure lowering the share of expenditure in health and, thus, worsening health outcomes.

**Figure 6: IRF Government Spending Shock**

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18 The formula for the multiplier we use is as follows $M = \frac{Y}{Y(GY)}$. 
The second structural shock we consider is a positive shock to overall economic activity, dubbed a GDP growth shock. The IRFs to a GDP growth shock are reported in Figure 7. The GDP growth shock is one which raises GDP growth by a cumulative amount of 3 percentage points over a 10 year horizon. This shock results in a reduction in the share of government expenditure in GDP of only 0.5 percentage points, meaning that government outlays increase in nominal terms following the increased economic activity, once again suggesting binding constraints to fiscal capacity. The GDP growth shock does not affect the government budgeting across health and the other components of public expenditure, with the share of expenditure in health remaining roughly constant. Despite that, a positive shock to economic activity is clearly beneficial to health outcomes. This is consistent with what we would expect if an increase in disposable income for example alleviates poverty and improves leaving conditions.

Figure 7: IRF GDP Growth Shock
The third structural shock considered is a shock to Health expenditure. This shock is ordered third, implying that a shock to health expenditure is allowed to affect contemporaneously GDP and the government’s fiscal outlays but is only allowed to improve health outcomes within at least one year. The IRSs for the health expenditure shock is presented in Figure 8. The cumulative impact of the health expenditure shock on the share of health expenditure in total public outlays is substantial (above 5 percentage points). Importantly, the total government expenditure as a share of GDP conditional on a health expenditure shock stays constant. This means that as the health expenditure is increased other components of public outlays must fall to keep total expenditure constant as a share of GDP. Once again it is apparent that the fiscal capacity of the countries in our sample is limited and that there are significant trade-offs faced by the public sector in the allocation of resources.

The health expenditure shock appears to have a negative cumulative impact on GDP growth, which may be associated with the crowding out of components of public expenditure with larger short-run multipliers compared to health expenditure. At the same, the health expenditure shock has a clear positive impact on health outcomes, lowering infant mortality considerably over the 10-year horizon. Thus, there is a clear positive health multiplier of increased health expenditure in the short-run, which adds to the clear long-run benefits of improved investment in healthcare. However, the limited fiscal space and severely constrained public finances of the countries studied poses a difficult challenge for policymakers wishing to achieve macroeconomic stability and at the same time fulfil the long-run objectives with regards to public health and human development.

Figure 8: IRF Health Shock
Indeed, in the countries considered the availability of resources to invest in health is particularly vulnerable to fluctuations in the ease of access to international liquidity. To illustrate this phenomenon, we estimate IRFs for each of the four variables in our SVAR to exogenous shocks to the external finance premium in African countries.\textsuperscript{19} The estimated IRFs are shown in Figure 9. External liquidity shocks are found to have a substantially negative impact on the expenditure in health as a share of total government expenditure and this is associated with worsening health outcomes.

\textsuperscript{19} The external finance premium is proxied by the corporate spread in emerging markets in Europe, Africa and the Middle East.
Figure 9: IRFs External Finance Shock

Conclusion

The results in this chapter highlight important public policy challenges for African countries. It is a clear policy priority for African countries to achieve significant improvements in population health and robust healthcare systems. To achieve this public health expenditure is paramount, as it represents the principal source of health finance. However fiscal space is limited, and macroeconomic stability often either hinges on curtailing public expenditure or, even if countercyclical fiscal policy stabilisation is feasible, there’s a clear incentive to favour expenditure on public investments with the largest GDP multipliers in the short run. As we have seen, this may fail to adequately protect funding to the healthcare system. Easy access to international capital markets and special financing facilities for investment in healthcare may therefore be important to alleviate the existing constraints.
Chapter 4: Marginal productivity of healthcare expenditure

by Jessica Ochalek and Karl Claxton

Background

The mandate of the ECSA-HC is to promote and encourage efficiency and relevance in the provision of health services in the region. Understanding how much health can be expected to be gained by increasing funding for healthcare (or how much would be lost should resources be cut) is key to informing a range of policy decisions at the national and regional levels. Crucially, it can be used to inform decisions around - i) how to allocate the MoH budget for the provision of healthcare, such that population health is maximised given the limited budget available, ii) communicating the value of expanding the budget for healthcare to the MoF and, iii) understanding the value of increasing health production inputs (such as healthcare workforce and infrastructure). These questions are relevant to both MoH and MoF within individual countries between whom resources must be shared, as well as across countries, insofar as quantifying these values enables iv) regional collaboration in incentivising research and development of healthcare interventions for use in the ECSA region and v) informing the relevance of global guidance to local decisions.

Allocating the budget for healthcare

A core objective of healthcare expenditure is to improve health, which includes preventing premature mortality (i.e., improving survival) and improving quality of life (i.e., reducing morbidity). Ensuring that decisions around whether to fund a health technology are informed by assessments of the extent to which they would be expected to improve population health requires an assessment of their health opportunity cost. The health opportunity cost of funding a healthcare intervention is the health expected to be gained by funding it net of the health that could have been gained had the money required to fund it instead been spent on existing healthcare activities. It’s difficult, if not impossible, to know which existing healthcare activities are given up to accommodate a new one. A practical alternative is to estimate the health gained from expenditure on existing healthcare activities, i.e., the marginal productivity of healthcare expenditure. Empirical estimates of the marginal productivity of healthcare expenditure can inform key decisions faced by healthcare decision-makers, going beyond whether a potential intervention should or should not be provided through publicly funded healthcare (e.g., included as part of a health benefits package) to informing how valuable an intervention is in terms of the net population health impact expected from funding it. This enables decision-makers to prioritise between interventions competing for funding from the same funding pocket. It can also provide useful information about the value of scaling up interventions that are currently funded but for which provision is not universal to all of those in need.

Whether an intervention should be funded depends upon whether the resources required to fund it could generate more health elsewhere in the healthcare system. An estimate of the marginal productivity of the healthcare system provides critical information on the rate at which healthcare expenditure is turned into health within the healthcare system, given current levels of infrastructure and expenditure, the current mix of provided healthcare interventions, and current population health (in terms of the age and gender distribution of the population, and existing burden of ill health and premature mortality). In this chapter, we consider marginal productivity to be measured as the number of units of health produced for a given level of healthcare.
expenditure. This is the inverse of how this is often reported (as the healthcare expenditure required to produce a unit of health, or ‘cost per unit of health’). A healthcare intervention that offers expected health gains at a higher rate than would be gained by increasing expenditure within the healthcare system (i.e., than the marginal productivity of the healthcare system) would generate a net health benefit and should be funded. Alternatively, funding a healthcare intervention that offers expected health gains at a lower rate than would be gained by increasing expenditure within the healthcare system would result in lower total health produced by the healthcare system were it funded.

Such binary assessments of cost-effectiveness are commonly applied to make funding recommendations (71–75). However, binary assessments such as these cannot be used to prioritise interventions by the amount of health they would be expected to generate if funded. Doing so requires quantifying the health opportunity cost of funding decisions in terms of the scale of the potential net health impact or its equivalent monetary value informed by an estimate of the marginal productivity of the healthcare system. The population net health impact is the difference between the expected health gains from intervention and the health that could have been gained and reflects the size of the population the intervention is expected to affect as well as the expected health effect and costs. This can be equivalently expressed as the monetary value to the healthcare system, i.e., the funding required to deliver the same amount of net health gains. These measures of value make it possible to go beyond binary decisions of whether a healthcare intervention is cost-effective or not, and to answer additional questions around which healthcare interventions represent “best buys” for the healthcare system and should be prioritised, and where investments in scaling up interventions should be made.

Expanding (or contracting) the budget for healthcare

Understanding the expected health gain from an increase (or how much would be expected to be lost by a decrease) in healthcare expenditure can inform decisions around whether and by how much to expand or contract the budget for healthcare. The marginal productivity estimates of healthcare expenditure give an indication of the expected implications for population health of a given increase or decrease in healthcare expenditure. This is useful not only to the MoF but also to donors who might contribute to the healthcare budget or commit funding to specific interventions or programmes, effectively increasing total health expenditure without drawing upon MoF resources. For example, in Malawi, an addition of $1 million to the budget for healthcare would be expected to increase overall population health by averting 7,233 disability-adjusted life years (DALYs).20 This type of analysis can be extended to estimate the distribution of the health impacts of increasing expenditure, providing information on the extent to which increases in health expenditure contribute toward reducing inequalities (76).

Decisions around the scale of the budget for healthcare affect other sectors’ budgets insofar as an expansion of resources for the healthcare sector precludes those same resources from being allocated to budgets in other sectors. Given that spending in different sectors will be aimed at meeting different objectives, decisions around how to allocate financial resources across sectors require a broader conceptualization of value that captures the objectives of expenditure across all sectors and a metric with which to measure this (77). This is typically operationalised through private consumption, which can capture trade-offs across public sectors and also the private sector, therefore capturing displaced private consumption (tax, for example). An estimate of the marginal productivity of healthcare in terms of health can be combined with a measure of the private consumption value of health to quantify the private consumption value of expanding the budget for healthcare. However, since estimates of the private consumption value of health are controversial, in practice, estimates

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20 Based on estimates of the marginal productivity of the Malawi healthcare system from Ochalek et al (2018).
are obtained mainly through the application of the principle of compensation: how much private consumption people losing health would require in order to be compensated such that they are neither better nor worse off overall (as measured by their utility) (78,79).

While improving health may be a core objective of healthcare expenditure for the MoH, the MoF may be interested in other effects of health expenditure, such as improvements in productivity. Marginal productivity estimates of healthcare expenditure form an important part of the evidence base for comparisons of the value of alternative uses of resources, providing a means to assess the expected population health gains from expanding the budget for healthcare, offering a starting point for informing further analysis as to who benefits (i.e., the extent to which expenditure increases impact on existing health inequalities) and a basis for calculating the impact of healthcare on other valuable outcomes.

Valuing increases in health production inputs

The effect that an increase in health expenditure has on improving health outcomes depends in part upon existing health production inputs, such as healthcare infrastructure and workforce. The marginal productivity estimates of healthcare expenditure relate observed levels of healthcare expenditure to health outcomes. However, there is a great degree of heterogeneity in terms of what comprises healthcare expenditure, and it is unlikely that all constituent parts are equally valuable in terms of health production at the margin. Investigation of this heterogeneity is important where the question isn’t simply to expand or contract the budget but instead to commit additional resources to a specific type of healthcare expenditure. Investigation of the effects of different types of healthcare expenditure can inform decisions around how to target resources more efficiently.

Incentivizing the development of new healthcare interventions

Demonstrating the value of developing interventions relevant to ECSA countries can help align developer incentives to government objectives. Marginal productivity estimates of healthcare expenditure for each country can be used to inform the maximum price each country could pay for the intervention to generate a net health benefit (or, at minimum, no net health loss) in the short run while the intervention is under patent. In the long run, interventions would likely go off patent, and generic versions of the intervention would generate a net health benefit. Aggregating across countries provides information about the scale of the market for an intervention to potential developers and can help to incentivise innovative interventions relevant to ECSA countries. Recent work proposes an approach to estimating the commercial and public health value of a vaccine in development that is generalisable to other healthcare interventions (80). It relies on estimates of the demand for a potential healthcare intervention, expected return on investment (accounting for the probability of success and cost of research and development), and the marginal productivity estimates of the healthcare systems in which it would be used in order to determine the value of the intervention. An earlier review of leishmaniasis vaccine development found that, to date, gaps in knowledge regarding the commercial and public health value of potential vaccines were a hindrance to vaccine development (81). A critical component of overcoming this and informing research priorities for developing healthcare interventions relevant to the ECSA region is marginal productivity estimates of ECSA country healthcare systems.

Informing the relevance of global guidance to local decisions

A number of international resources have been made available with the aim of guiding decision-making around healthcare expenditure in LMICs, such as the Disease Control Priorities compendium (74). Other international organisations set international objectives, like the SDGs, which may be cited to inform priorities in healthcare.
In reality, following a global recommendation may result in a net health benefit for some countries and a net health loss for others. For example, following the WHO recommendation to ensure 90% coverage of human papillomavirus (HPV) vaccination among girls by 15 years of age would result in net health losses in most countries without external support to countries from Gavi, the Vaccine Alliance (82). Assessments of the expected net health benefit, informed by the marginal productivity estimates of expenditure on health, could be used to ensure global recommendations are made only when they are expected to benefit all countries or to target specific countries.

Existing evidence on the marginal productivity of healthcare expenditure

What is required to inform all of the critical policy questions set out above is a marginal productivity estimate of healthcare expenditure. From a practical perspective, estimating this relationship is, however, challenging. The crux of the challenge lies in overcoming issues of endogeneity between expenditure and outcomes. Researchers at the University of York produced the first such estimate for the National Health Service in the UK (83), using methods to overcome endogeneity to estimate a causal relationship between spending on health and mortality, and translating the mortality effects into a broader measure of health (which accounts for the length of life and quality of life) (83). Work since has drawn upon some of the methods applied in Claxton et al. (2015), typically using advanced econometric methods to estimate the effect of expenditure on health outcomes using within-country data and then translating this effect into a cost per unit of health (84). Health is typically measured using a metric that accounts for changes in the length of life and health-related quality of life (HRQoL), such as quality-adjusted life years (QALYs) gained or disability-adjusted life years (DALYs) averted, enabling comparisons across healthcare interventions or programmes that affect the length and/or HRQoL. Data from within a given country (i.e., making use of variations in expenditure and health outcomes across geographical areas and/or time periods within a country) has been used to estimate the marginal productivity of a handful of healthcare systems globally: the UK, Spain (85), Australia (86), the Netherlands (87,88), Sweden (89), South Africa (90), China (91), Colombia (92) and Indonesia (93). The methods used have been reviewed and summarised by Edney et al. (2022) (84), who find that the data requirements for this type of analysis are stringent, and the time required to undertake the analysis is non-negligible - often measured in years rather than months.

In response to the practical challenges associated with estimating the marginal productivity of the healthcare system using within-country data, Woods et al. (2016) (94) and Ochalek et al. (2018) (95) employ alternative approaches. Woods et al. (2016) extrapolate from the UK estimate to provide estimates for a range of countries by applying data on the income elasticity of the value of health to generate ranges of cost per QALY gained estimates. Ochalek et al. (2018) draw from the body of existing work to estimate the effect of different levels of healthcare expenditure on mortality outcomes using cross-country data and expand upon a particular methodology and dataset from Bokhari et al. (2007) (96) to estimate the effect of changes in health expenditure on health outcomes for a range of LMICs. Following the methods applied in within-country work, they translate the estimated effect of expenditure on health outcomes for each country into a cost per unit of health that accounts for survival HRQoL using country-specific data on health expenditure, epidemiology, and demography from an international dataset. The estimated ranges of the marginal productivity of ECSA member countries’ healthcare systems from Woods et al. (2016) and Ochalek et al. (2018), expressed as cost per QALY gained or DALY averted, respectively, are provided in Figure 10 and Table 16 below.
Figure 10: Estimated ranges of the marginal productivity of LMIC healthcare systems from Woods et al (2016) and Ochalek et al (2018) expressed as cost per QALY gained or DALY averted.

Table 16: Estimated ranges of the marginal productivity of ECSA member countries' healthcare systems.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost per QALY gained (2015 US$)</td>
<td>% of GDP per capita</td>
</tr>
<tr>
<td>Eswatini</td>
<td>304-1644</td>
<td>9-51</td>
</tr>
<tr>
<td>Malawi</td>
<td>124-164</td>
<td>33-44</td>
</tr>
<tr>
<td>Mauritius</td>
<td>2260-5977</td>
<td>24-65</td>
</tr>
<tr>
<td>Zambia</td>
<td>417-575</td>
<td>32-44</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>202-273</td>
<td>22-30</td>
</tr>
</tbody>
</table>

To date, there are only three LMICs, South Africa, China, Indonesia, and Colombia, for which there are marginal productivity estimates of the healthcare system estimated using within-country data published in peer-reviewed journals (90–92). This is an evolving and expanding area of research, however, with groups in other LMICs working toward developing estimates for their own countries.
Existing cross-country estimates are from 2015 and can be updated with more current country-specific data on health expenditure, epidemiology, and demography (12), assuming that existing estimated elasticities of the effect of expenditure on health outcomes remain a reasonable proxy for such elasticities now. Evidence from the UK, where elasticities have been estimated for a number of different years of data, suggests that estimated elasticities are largely stable over time (97). Table 17 presents updated estimates for Eswatini, Malawi, Mauritius, Zambia and Zimbabwe based on Ochalek et al (2018).

**Table 17:** Updated ranges of the marginal productivity of ECSA member countries healthcare systems

<table>
<thead>
<tr>
<th></th>
<th>Range for 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost per DALY averted (2019 US$)</td>
</tr>
<tr>
<td>Eswatini</td>
<td>1,348-2,932</td>
</tr>
<tr>
<td>Malawi</td>
<td>132-206</td>
</tr>
<tr>
<td>Mauritius</td>
<td>3,568-5,456</td>
</tr>
<tr>
<td>Zambia</td>
<td>644-907</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>269-376</td>
</tr>
</tbody>
</table>

An alternative approach to updating the marginal productivity estimates of healthcare is to estimate its association with variables such as GDP per capita in the cross-section and to apply this relationship to anticipated changes over time as can be seen in Table 18 below (98). In addition to providing up-to-date estimates, with projected values for variables far enough into the future, this method can be used to calculate health opportunity costs of interventions in future years. This approach has been implemented using projections of GDP per capita from Dieleman et al. (2017) (99) as well as other variables to obtain forecasted values for the marginal productivity of healthcare expenditure up until 2040.

**Table 18:** Estimated average annual real growth in the marginal productivity of healthcare expenditure, expressed as cost per DALY averted, of ECSA member countries' healthcare systems from Lomas et al. (2022)

<table>
<thead>
<tr>
<th></th>
<th>Average annual real growth in GDP per capita (2015-2040)</th>
<th>Average annual real growth in the marginal productivity of healthcare expenditure expressed as cost per DALY averted (2015-2040)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eswatini</td>
<td>0.6%</td>
<td>1.3%</td>
</tr>
</tbody>
</table>
Malawi | 0.4% | 1.0%
---|---|---
Mauritius | 3.2% | 3.6%
Zambia | 1.2% | 1.6%
Zimbabwe | -0.1% | 0.6%

Future research

This chapter has outlined the numerous implications for policy that stem from marginal productivity estimates of healthcare expenditure. Existing evidence for ECSA member countries is based on cross-country analysis and indicates that there is considerable heterogeneity among these countries both in terms of the marginal productivity of healthcare expenditure for 2015 and 2020 and in the expected trajectory between 2015 and 2040. Marginal productivity estimates of the healthcare system are valuable for informing decisions nationally and regionally. Below, we identify potential areas for future research in this area. Filling these data gaps may provide evidence to further promote and encourage efficiency and relevance in the provision of health services in the ECSA region.

**Estimating the marginal productivity of the healthcare sector using within-country data:** Existing marginal productivity estimates of the healthcare system based on cross-country data serve as an important placeholder while future work is conducted in this area. Future studies should use within-country data to estimate the marginal productivity of countries’ healthcare systems within the ECSA region to better inform resource allocation decisions. This entails bespoke analysis along the lines of work conducted in LMICs such as China, South Africa, and Colombia and could ultimately form the basis of comparisons of estimates over time as has been conducted in the context of the UK.

**Accounting for the timing of the costs and effects of expenditure on healthcare interventions:** The availability of marginal productivity estimates of healthcare expenditure in future years allows for more accurate estimates of the value of healthcare interventions, which often have health impacts beyond the present year. Existing projections of the marginal productivity of expenditure on health were estimated prior to the Covid pandemic, and more recent international sources may provide different results. However, domestic sources, in particular, MoF projections, would likely offer a more precise alternative data source. Evaluations of this kind also require discount rates that are evidence-based (available from Lomas et al. (2022)). Additional considerations, such as disease dynamics and the risks associated with interventions, and how they are correlated with macroeconomic risk, could improve economic evaluation analyses to better inform the value of a potential or existing intervention to each healthcare system.

**Accounting for cross-sectoral effects of government expenditure:** Policymakers may be interested in understanding and considering the impacts of healthcare expenditure on the wider economy and how health effects are distributed, respectively. There is a precedent of extensions to work concerning the marginal productivity of healthcare expenditure to address these issues in the UK context, which may provide useful starting default assumptions (see Claxton et al., 2019 (100)) while awaiting such research for ECSA countries. The starting point for this kind of analysis is to first estimate the marginal productivity of the healthcare system
for a country using within-country data, which can then be combined with a measure of the private consumption value of health (from, e.g., Robinson et al., 2019 (101) and Lomas et al., 2022 to quantify the private consumption value of expanding the budget for healthcare). Estimates of the private consumption value of health could also be estimated using within-country data (as has been done in the US, see Robinson et al., 2019).

**Assessing the impact of health expenditure on other objectives:** It may be possible to link marginal productivity estimates of healthcare expenditure on health to effects on other outcomes. One way of doing this is to link health effects to other outcomes. In the UK, the contribution of different types of health to the production net of consumption has been estimated. This then enables calculating the effect of healthcare on net production. Crucial to all of this is first establishing the health effects of healthcare, and their composition (e.g., age distribution), which underpins the estimates of marginal productivity. Ultimately, comparisons of the value of alternative uses of resources are important for informing resource allocation decisions across sectors.

**Valuing increases in health production inputs:** This requires estimation of the effect of different types of expenditure on overall health. Work from the UK shows that this is possible and provides some evidence on the health effects of healthcare expenditure in a range of disease areas. Earlier work reported the marginal productivity of disease-specific (e.g., cancer, etc.) expenditure on disease-specific (e.g., cancer, etc.) outcomes. This is limited, however, in that other expenditures will affect outcomes of a given disease, and expenditure on that disease will have effects beyond that disease. More recent work links all-cause expenditure to cancer mortality but stops short of estimating the implications in terms of a broader measure of health (since the composition of the effects is likely to vary by type of spend). This could be used to inform the expected health effects of expanding expenditure on cancer, for example. In principle, this kind of estimation could be used to investigate different types of healthcare expenditure (such as workforce and infrastructure). This provides an alternative approach to this kind of question to other methods.
Chapter 5: Health sector resource allocation

by Megha Rao, Sakshi Mohan, and Paul Revill

Background

Health policymakers in Africa face especially severe challenges in funding and delivering programmes to reach the goal of UHC. Apart from limited key health system inputs and some notable weaknesses in governance arrangements, profound resource constraints intensify the pressures on priority-setting processes (102). In addition, many countries in Africa rely heavily on external resources to finance their health systems, and also receive support from development partners for technical assistance and programme implementation. This reliance adds a further international dimension to the complexity of setting priorities (103). This chapter reviews the most common tools and frameworks to inform resource allocation, offering examples of their application and providing guidance to policymakers in the choice of tools. These tools can contribute to attaining UHC in ways that make the best use of the resources available (i.e., achieve “more health for the money”), as well as showing the value of committing additional resources for healthcare (75). The review is
Conceptual frameworks for resource allocation and tools available

All health care systems need some means to determine which interventions are purchased and provided for recipient populations. The issue is fundamentally one of economics: resulting from the scarcity of resources, the need to make choices, and opportunity costs (benefits forgone) as a result of choices. In Africa, especially in countries in which health spending is lowest, health improvement is hindered not so much by the lack of available interventions to address the main causes of disease burden but by limited resources and weaknesses in health systems. Better resource allocation to and within health systems has, therefore, huge potential to improve population health. The use of technical tools to inform resource allocation is broadly known as economic evaluation (104). Economic evaluation informs policy choices by providing evidence on the benefits, costs, and opportunity costs of alternative courses of action and has been used by governments to consider the values of a wide range of policies. Chisholm and Evans (2010) (105) find significant variation among countries spending similar amounts of money, suggesting that poorly performing health systems can achieve improved outcomes if funds are better invested (103). For low- and middle-income countries (LMICs), “priority setting” is often used to refer to processes that allocate resources with the goal of maximizing health impact within a given expenditure limit. In this section, we present a range of methods and approaches, concentrated in Malawi and more recently in Uganda, that have been developed under the four-year-long Thanzi la Onse program, which has the potential to be applied much more widely to address system-wide health policies and resource allocation for health across the African continent. The most significant features of these methods are that they have been developed to be i) readily utilized based on in-country needs, and ii) easily adaptable and applied using data sources that are available in most countries. Examples of these evidence-based priority-setting tools include health benefits packages, geographical resource allocation formula, health technology assessment, evaluation of health systems strengthening, methods to prioritize research activities, public financing management, and investing in determinants of health. In the following sections, we will highlight the salient aspects of these tools and how they can be incorporated into decision-making frameworks to identify the best value for money in achieving what is important to the focus countries.

Health Sector Resource Allocation Tools

1. Health benefits packages (HBPs)

In many countries, a major tool for resource allocation decisions over the choice of health care interventions is a health benefits package (HBP) (106). HBPs are commonly used to allocate scarce resources to key healthcare interventions that are deemed “best buys” for the healthcare system (i.e., those which provide the greatest value, however value is defined) and are a critical element to achieving UHC (107). Over recent decades, HBPs have been designed for use in countries worldwide, from South America (73) to Central Asia (108). A review by Todd et al. 2016 (109) shows that of the sixteen countries in the Eastern and Southern African (ESA) region, thirteen had an HBP (also called “Essential Health Benefits” (EHB)) in place or are in the process of updating it. Within the East, Central, and Southern Africa (ECSA) health community region, HBPs have been adopted by all except Mauritius - Kenya (National Health Insurance Fund), Lesotho (Essential Service Package), Malawi (Essential Health Package (EHP)), Eswatini (Essential Health Care Package 2010), Tanzania (National Package of Essential Health (NPEH)), Uganda (Minimum Health Care Package (MHCP)), Zambia (National Health Care Package (NHCP)) and Zimbabwe (Essential Health Benefit). Despite the
frequent and increasing use of HBPs in countries across the world, package design often suffers from a number of common flaws. The process of benefits package design is often non-transparent, non-inclusive, and not informed by explicit analysis that makes the best use of the often-limited evidence available (75). Decisions can, therefore, appear ad hoc rather than evidence based. In particular, the health opportunity cost of decisions is seldom accounted for. Attempts have been made to address some of the evidential shortcomings with ‘global public goods’ (e.g., the DCP series). However, they often fail to address local conditions such as constraints on provision and uptake. As a result, packages generally promise more than they can deliver, and healthcare is implicitly rationed, with the most essential care not necessarily being delivered (73). Thus, if HBPs are to meet the aspirations of UHC, an analytic framework is required that exposes the inevitable trade-offs to assist decision-makers in their design. Such a framework was developed for use by the Ministry of Health (MOH) of Malawi to support the revision of Malawi’s essential health package (EHP). The framework is grounded in the principles of cost-effectiveness analysis (CEA). By using CEA and putting health maximization at the center of the HBP, a package that results in the greatest gains in overall population health at a given budget can be determined (102). Work in Malawi showed that this could lead to substantially different allocations from previously used methods (15). The Malawi case shows that the analytic framework is not prescriptive but rather a tool to guide decision-making that reflects the context in which they are made, and which can be adapted and applied to different settings.

Senior policymakers in Africa have been demanding to receive more research and analytical support to inform resource allocation decisions. In Zambia, the latest EHB version, called the NHCP, still needs to be fully costed in a consultative manner, institutionalized at the policy level and officially disseminated (110). The EHCP in Eswatini was intended to guide the provision of health services. However, its costs were beyond the national resources to fund it, and the adoption of a more restrictive form of their current EHCP is being considered by the Eswatini government (111). Zimbabwe updated its EHB in 2014, but to date, this update is only developed for primary and secondary care levels and not at tertiary or quaternary care levels. Moreover, the methods and assumptions used for both prioritization of services and their costing in HBPs do not appear to be comparable across the region. There has been a rise in demand for a fair and credible costing method among the ministries of finance, national and external funders, and calls for regional exchange and harmonization in this area. The framework for Malawi could help facilitate i) the national design and costing process, given the Ministries of Health’s appetite to revisit the development of HBPs in these three countries, and ii) regional exchange, guidance, and data to support prioritization and costing.

2. Resource allocation formulae (RAF)

Optimizing the use of limited health resources in low-income and middle-income countries towards the maximization of health outcomes requires efficient distribution of resources across health services and geographical areas (112). The global movement toward the devolution of essential government functions has been accompanied by a quest for effective resource allocation frameworks (113,114). There has been a rising adoption of a formula-based approach to resource allocation among low and middle-income countries, particularly in sub-Saharan Africa (113–116) and South America (117) However, these have been widely implemented (with differing degrees of sophistication) across the world. While many countries continue to rely on historical allocations (114), some LMICs have attempted to move towards the distribution of resources based on indicators that attempt to capture variation in ‘need.’ In a review, Anselmi et al. (2015) (113) identify eight resource allocation studies (six in Africa) and highlight the use of population weighting by demographic, socioeconomic, and health status characteristics, including mortality, as common components of allocation formulae. These formulae can be simplistic, such as those based solely on demographic-adjusted populations, or complex. For example, Uganda introduced a formula to allocate its health budget to districts based on an
index of demographic adjusted population, a human development index (including per capita income, life expectancy and school enrolment ratios) and local donor spending (15,118). As an alternative to formula-based methods, an increasing number of LMICs are adopting explicitly defined health benefits packages (HBPs) to guide healthcare resources towards a priority set of healthcare interventions [refer to the previous section]. However, resource allocation formulae are rarely aligned with these prioritized healthcare interventions. Studies have highlighted that, rather than formulae being based on proxies of need, they could instead be more explicitly linked to HBPs (109,119). Such a link is highly advantageous in operationalizing national objectives and in matching resources to the relative need for healthcare services within LMICs. Based on this, researchers at CHE-York presented Malawi as a case study to illustrate how the basic principles of resource allocation formulae development can be adapted to realize such a linkage and operationalized. In Malawi, its latest HBP (“Essential Health Package”), adopted in 2017, served as a foundation for the design of the RAF. McGuire et al. (2020) (120) developed a formula to distribute the health sector budget across districts and ensure sub-national budgetary allocations are made on the basis of districts’ relative EHP-related needs. The results revealed major changes in budgetary allocations for most districts (allocation changes of over 50% were recommended for four of Malawi’s 28 districts), and though immediate changes were infeasible politically, the approach served as a useful mechanism for informing dialogue with MOH and relevant stakeholders (112,120).

While a growing number of LMICs have outlined a national benefits package, although not always design for population health maximization from within given constraints, and some have ‘needs’-based resource allocation formulae, to date, few have linked the two components. Consequently, there is a disconnect between national policy and subnational resource allocation, representing a missed opportunity. Examples of this are Zambia, Eswatini, and Zimbabwe, which have outlined a national predefined health benefits package. Despite this, in Zambia, allocation of resources to districts is based on population-weighted by a deprivation index, including poverty incidence, distance to facilities, ownership of capital, type of housing, and disease burden, whereas in Zimbabwe and Eswatini, there is no systematic rationale for allocating the health budgets geographically. However, recent years have seen rising momentum in adopting RAFs, with the latest public expenditure reviews and national strategic documents on health for Zimbabwe, Eswatini, and Zambia, emphasizing the need to develop an explicit resource allocation formula to guide budgetary resource allocation for health.

3. Health technology assessment (HTA)

The challenges of resource allocation and investment decisions in health care are common to all countries. However, governments in many African countries, in particular, operate in a context of extreme scarcity of resources and need to make difficult decisions. Health technology assessment (HTA) offers a set of analytical tools to support health systems’ decisions about resource allocation and has emerged as a means of ensuring the sustainability of a UHC system. It is used globally to support explicit, evidence-informed priority setting, and it involves the systematic evaluation of the properties and effects of a health technology, where a health technology can include any intervention that may be used to promote health, prevent, diagnose, or treat acute or chronic disease, or for rehabilitation (121). The use of HTA has several advantages - i) it leads to better use of limited resources by guiding investments in technologies that are more likely to be of value in the national context; ii) it helps to align various stakeholders (government and donors) around national health system objectives; and iii) strengthens price negotiations, especially if such action is coordinated across a range of similar countries (for instance, in the ECSA-HC). Moreover, in sub-Saharan Africa, HTA is considered an important and valuable priority-setting tool with a key role in HBP design, clinical guideline development, and service improvement (121).
The fewer the country’s resources, the more the need for appropriate evidence and analysis based on the principles of HTA to inform rational decisions on investments, prioritize needs, and assess the value of health technologies and their implementation (122). Currently, HTA is mostly used in the context of high-income countries. While there are notable low and middle income country (LMIC) exceptions of introducing and institutionalizing HTA (e.g., Thailand, Colombia, Brazil, and India), the limited evidence available points to the historical and ongoing lack of HTA in low income countries (LICs), in particular, despite having a great need for it (123). Formal implementation of HTA and transparent use in most African countries is still limited (124). HTA methods are getting more recognition in selected LMICs in Africa, such as Egypt (125), Morocco, Tunisia, and Cote d’Ivoire (126). In particular, Ghana has undertaken a pilot study to investigate the use of HTA for specific health technologies (127,128). Tanzania (129,130), and Ethiopia (131) are among the few low-income countries (LICs) exploring the use of HTA principles.

The current lack of HTA in sub-Saharan Africa (SSA) can be attributed to three key bottlenecks. First is the scarcity or lack of financial and human resources for undertaking research and analysis on resource allocation and assessing the quality of HTAs (127,129). Second, limited and unreliable locally-relevant data to inform country-specific HTAs (132). Third, formal local decision-making procedures, such as the use of HTA that simultaneously considers costs and benefits, are often lacking, and there is limited understanding by policymakers of its potential value (133). To address these limitations, researchers in Thanzi la Onse have examined how HTA methods can inform decision-making and guide health spending in “resource-poor settings.” Building upon previous examples (134,135), Ramponi et al. 202221 propose a framework that can be adopted in Malawi, with methods that are feasible given the resource and capacity constraints faced and use two contrasting technologies (CT scanners and HIV self-testing) as examples to investigate the main barriers and enablers to the use of HTA methods. Their framework comprises four main stages, namely: i) ‘identification and prioritization’ of technologies for assessment; ii) ‘adoption’ decisions as to whether particular technologies should be funded within the health system; iii) ‘implementation and scale-up of technologies for widespread use, and iv) ‘further research initiatives’ that may be valuable in reducing uncertainties relating to these decisions. For each stage, they identify the policy decision to address; elucidate how evidence and analysis can support each decision; and show how an explicit, transparent, and systematic approach to funding could be adopted.

Although HTA remains relatively under-utilized in SSA, there is growing political commitment and policy interest (136–140). For instance, Zambia’s National Health Financing Strategic Plan mentions establishing an HTA unit responsible for the economic evaluation of the cost-effectiveness of any changes in drugs and treatment procedures included in their HBP. One of the key strategic objectives of Mauritius’ Health Sector Strategic Plan 2020-24 is to undertake HTA in collaboration with the University of York through Thanzi la Onse. However, in Eswatini and Zimbabwe, there is currently no specific agency responsible for or tasked with development of HTA. This call for an appropriate HTA tool for “resource-constrained” settings, especially in SSA, which would address all important criteria of decision making; with application of the framework developed by Ramponi et al. holding particular promise.

Cross-cutting investment in Health System Strengthening (HSS)

Health system strengthening (HSS) is a critical component of global public health and international development (141–143). There is consensus that, alongside spending on specific healthcare and public health

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21 This paper is currently in progress
interventions, there is a need to invest in the complex health system infrastructure of human and capital resources on which delivery of these interventions is dependent (144). This is particularly felt in the ECSA-HC regions due to high disease burdens and serious resource constraints. Providing evidence on the value of health system strengthening (HSS) is very challenging because its benefits cut across several health-related activities and are mediated through many different types of interventions. In recent years, theoretical literature has provided greater insight into how the value of HSS can be determined. In particular, weaknesses in health systems can be seen as a series of constraints on the effective use and uptake of healthcare interventions that, if tackled, have the capacity to improve individual health and be cost-effective (145). The contributions of HSS can therefore be conceived in terms of relaxing these constraints, thereby enabling effective healthcare delivery and improving health. Although often limited to assessing the impact of HSS on single clinical or public health interventions, the most promising theoretical contributions have focused on optimising packages of healthcare. Whilst theoretical contributions have advanced in recent years, the empirical literature on the value of HSS has lagged behind, and, as yet there have been no studies on the effects and value of HSS on packages of care spanning the full healthcare system. Instead, empirical evaluations have focused on HSS enabling the delivery of interventions within a specific disease or program (146). Impact evaluations of HSS have largely faced the same issue, potentially leading to the over-or under-estimations of the actual impacts by not acknowledging broader effects (147).

Conventional approaches to health economic evaluation and investment cases are centered around the use of healthcare budgets to generate health. However, in reality, particularly in LMICs, is more complex due to the presence of budget silos instead of one overall healthcare budget, limits to real resources (e.g., human and capital infrastructure) in addition to financial constraints, and system weaknesses leading to poor implementation. There are various ways health systems strengthening can be modeled (Hauck et al. 2019), of which perhaps the most promising for empirical assessment is to view systems weaknesses as constraints on health improvement. This is applicable in local decision-making situations, where the details of capacity constraints, demand-side constraints, and other relevant factors are likely to be very important. To illustrate this, we summarize the results from two new case studies of Uganda and Malawi, on the potential health gains attainable from specific investments in HSS conducted by researchers from Thanzi la Onse. Mohan et al. 202222 demonstrate how the linear constrained optimization approach (LCOA) can be used to design an HBP that maximizes the net health impact given the financial and physical resource constraints of Uganda’s public health sector. The analytical framework offers the flexibility to include other health system constraints and can be applied to answer some of the most pressing resource allocation decisions facing ministries of health. In Uganda, findings reveal that investing budgets to expand the availability of certain cadres of the healthcare worker (nurses, pharmacists, and nutrition officers) is expected to result in more than 15 times the health impact of equivalent additional spending on priority drugs and commodities. The LCOA framework has also been used to guide the design of the new Essential Health Package for the third Health Sector Strategic Plan (HSSP-III) for Malawi. Marginal value analysis suggests that the most important bottleneck in the Malawian Health system is the shortage of doctors and clinical officers, which makes it difficult to further expand the HBP. More specifically, $1000 invested towards buying additional doctor/clinical officer time would result in more than 250 net DALYs averted. Further, investing in expanding the drug budget or nurse/pharmacist time would not result in more health until this bottleneck is addressed.

22 Unpublished
Addressing determinants of health

Over the past two decades, increased policy attention has been given to the role that sectors other than health play in determining population health (148,149). This includes WHO-supported National Commissions on Macroeconomics and Health (NCMH) and the framework for Health in all policies (HiAP) that foster synergies between key health-producing sectors. The major determinants that shape the health status of the nation are often improved through public spending in other sectors (agriculture, education, housing, social services, disaster management, water, etc.). They often also involve collaboration of multiple and disparate stakeholders, including national and transnational funders, and various stakeholders across different sectors of the economy at the national and local level (150,151). The ministries of health of several ECSA countries like Zimbabwe, Zambia, Eswatini, Uganda, and Malawi recognize that addressing the key determinants of health will require strengthening intersectoral collaboration and partnerships to advance the UHC agenda. This calls for evidence and action toward strengthening collaboration across sectors, which in turn will rely on effective multi-sectoral resource allocation frameworks (152,153).

The importance of priority-setting tools such as economic evaluation to support decision-making in public health is widely acknowledged; however, in the practice of decisions related to public health, the use of economic evidence is limited. This may be partly due to economic evidence typically not addressing the priorities of multiple stakeholders. In response to this, Thanzi la Onse researchers have embraced sought to strengthen methods for the economic evaluation of interventions with impacts on multiple sectors, such as multi-sectoral programs to improve nutrition (154). Using the Social Cash Transfer Programme (SCTP) in Malawi as a case study, Ramponi et al. 2022 (133) illustrate the first field testing in Africa of an analytical framework that describes how economic evaluation can inform multiple, heterogeneous decision-makers and provide guidance for an overall “societal” perspective, which has been missing in the economic evaluation literature (155). Cash transfers have been found to impact health, health care utilization, and social determinants of health, such as poverty, education, productivity, and living environment (156). Ramponi et al. ’s 2022 (133) framework lays out the various effects and makes explicit the opportunity costs to each stakeholder in order to inform about the value of a cross-sectoral policy delivered in a low-income setting. Their analysis brings together available research evidence on the SCTP and allows assessment of the cost-effectiveness of the program from alternative points of view. It reflects the different goals and constraints of the various stakeholders and exposes the consequences for alternative perspectives. It provides a transparent tool that can support discussion among potential funders of the SCTP and inform discussion about alternative funding arrangements. Thus, the proposed framework demonstrates i) how to generate information for a range of government ministries and donors that may work together without an overall decision-maker; ii) which stakeholders would regard a policy as value for money within their remit and budget; iii) the sensitivity of conclusions about the overall value to different approaches to aggregating results across different outcomes and different population groups, and iv) discrepancies in the marginal productivity of resources available to different stakeholders and potential compensations or transfers between stakeholders.

The health sector strategy plans (HSSP) for Zimbabwe, Zambia, Eswatini, Mauritius, and Malawi emphasize the importance of wide sensitization on the social determinants of health to synergize the benefits for improved health outcomes. However, the lack of multi-sectoral collaboration and coordination is a problem inherent across settings. Also, priority-setting tools such as economic evaluation methods that can be applied to multi-sectoral resource allocation are not widely used. Therefore, the proposed framework for analysis could have a

23 Adapted from contributions by Stephen Banda, Tom Aliti, Dominic Nkhoma and Aloysius Ssennyonjo (Ramponi et al 2021 unpublished)
wide use more generally in the evaluation of other complex interventions with impacts accruing to different sectors and that involve multiple stakeholders. Also, experience shows that intersectoral action is equally a political process that usually suffers from contestation and competition over ideas, resources, and interests. The differences in appreciation of economic principles across sectors are likely to be a constraint. The framework’s application should take cognizance of these dynamics. These economic tools should be complemented with other approaches that explore the political economy aspects during budgeting, resource allocation, and priority setting.

Public financial management (PFM)

While there is evidence that PFM is a concern in a number of sectors, it is in the area of health financing where the most visible agenda has emerged in recent years (157). Many countries have committed to UHC as a national policy priority. Since public funds are the cornerstone of sustainable financing for UHC in most countries, the PFM system – i.e., the institutions, policies, and processes that govern the use of public funds – plays a key role in ensuring UHC across countries of the world. In addition, the declining role of aid and formal ‘transition points’ that determine eligibility for support from donor programs have raised questions about the sustainability of donor investments in the sector (157). This has led to an emphasis on the need to raise more domestic revenues for health services and strengthen domestic health-financing systems (158,159). If health services are primarily funded by domestic revenues, there will be inevitable resource constraints, and ministries of health will need to take action to maximize the value of this spending as well as seek to raise additional resources. The health financing community has identified a number of approaches to improve the efficiency of health spending, such as paying hospitals and other health facilities based on the level and quality of outputs they provide (results-based financing). This has generated both greater interest in national systems and concern that PFM systems may constrain these health financing reforms (160,161).

The quality of PFM systems in health is one of the necessary enabling factors for health financing reform implementation. Recently, there has been a growing interest in understanding how changes to PFM systems can contribute to improved service delivery outcomes. There is a small but growing body of literature that explicitly recognizes the role of PFM in health service delivery (160–165). New frameworks to conceptualize the important links between PFM and service delivery results have been developed (160,164,166,167). Econometric studies have investigated the relationship between the quality of PFM systems and service delivery outcomes (164,168,169). Other research has provided case studies or comparative analyses on specific aspects of PFM with a more detailed sectoral lens (164,165,170–172). This agenda on PFM and service delivery has also led to demands from development agencies for a new generation of diagnostic tools that can help donors identify PFM bottlenecks that are holding back service delivery performance (173,174). Bottlenecks may describe the way PFM weaknesses are directly undermining the basic provision of public services (164,175). Alternatively, PFM systems may be a bottleneck for implementing sector reforms that are expected to strengthen services (160,161).

Historically, PFM challenges affected health expenditure through chronic bottlenecks at all steps of the budget cycle, i.e., from budget formulation to execution and reporting, across the Africa region. Effective implementation of health financing reforms will, therefore, largely depend on strengthening and tailoring both cross-sector PFM reforms and those specific to the health sector in relation to budget planning. African countries have embarked on a long-term cross-sector PFM reform agenda since the 1990s. The gradual introduction of a standard set of interventions, including multi-year expenditure frameworks, budget formulation reforms (e.g., program-based budgeting), and computerized financial management systems, aimed to transform PFM systems in the region. As a result of these reforms, evidence suggests that PFM systems
have indeed improved over time in several countries. However, Public Expenditure and Financial Accountability (PEFA) scores – which assess the performance of PFM systems – remain heterogeneous across countries of the region (176–178). There are notable budget credibility challenges in the health sector, as evidenced by the UNICEF budget briefs24 and PFM reports (179) for the five focus countries. Poor budget credibility in health is often the result of weak priority setting and costing approaches in the region. Within the African region, budget execution is reported as the weakest component of the budget cycle. Findings indicate that four out of the five focus ECSA countries for this report (except Mauritius) have discrepancies in health spending outside the +/-5% variance, undermining the credibility of the budget as a strategic tool for resource allocation. Between 2014 and 2018, there has been an erratic trend in health budget execution rates in Eswatini. Moreover, in both Malawi and Zambia, we observe that execution challenges are wider at the district level. Off-budget donor funds in Malawi face absorption challenges. Zimbabwe’s investment budget and public health program performance are very weak, underperforming perennially. Such persistent budget execution challenges are adversely impacting value for money in health spending.

Carefully specifying a country’s PFM bottlenecks in the health sector (e.g., limited access to funds for health facilities, the mismatch between central budget and health needs, and rigidities in the use of funds) is a necessary step toward defining tailored responses. PFM reforms should be better grounded in the sector’s specificities to enable a more effective response. They should also be better coordinated with other reforms affecting health spending (e.g., strategic purchasing reforms) to ensure consistency and maximize effects. Whilst moving towards a predominant reliance on public funds for UHC, more careful attention should be given to local-level obstacles to ensure public resources are delivered promptly to the health facilities that need them. Frontline health facilities require transparent and equitable arrangements for receipt of resources, as well as tools and capacity to manage and account for the use of resources (180).

All countries will clearly be grappling with difficult decisions on how to finance public services in the coming decade. Piatti-Fünfkirchen and Smets (2019) (169) indicate that the pursuit of UHC and the progress toward related SDGs will be costlier if enabling systems are not in place. Given the many competing demands on fiscal resources, evidence of value for money for investing in human capital matters for ministries of finance and the development community alike and will strengthen health ministries’ ability to advocate for a greater share in the budget. As a corollary, if investing in public financial management systems offers increasing returns to health spending, the marginal benefit of such expenditures may well outweigh the marginal cost and thus be an endeavor worth pursuing. They suggest that, on average, good PFM matters significantly and that it matters significantly more in health systems that are more reliant on government financing.

Research Prioritisation

Most research aims to better understand current epidemiological patterns, healthcare provision, and patient outcomes and how they would be impacted by alternative interventions with a view to informing healthcare investments in the near term. By improving the information available to support investment decisions, they have the potential to improve population health. However, research is costly, and those funding research have constraints on their ability to expand research budgets. This raises the question of which research activities should be prioritized and is pertinent for a wide range of stakeholders, both national and international, that must prioritize research proposals across diverse clinical areas, types of studies, geographies, and target populations.

24 https://www.unicef.org/esa/reports/budget-briefs
To answer this question, a set of methods such as the value of information (VOI) analysis are often used to determine how much one may lose out by taking a decision with uncertain outcomes and, therefore, how much benefit there is to reducing uncertainty via research. VOI analysis has been applied in a range of contexts in high-income settings (181,182), and previous studies have also estimated the value of further research in African and other low income contexts (183–185). However, these studies used advanced methods that require detailed knowledge of statistical theory and the availability of data. As a result, the application of VOI analysis to help prioritize research has been limited. In response to this, Thanzi la Onse researchers built on VOI methods to support research prioritization in ways that could more readily be used in applied analyses. Health benefits packages (HBPs) are increasingly used to guide spending priorities on the path toward UHC, but their design is informed by an uncertain evidence base. Evidence on the costs and benefits of healthcare interventions considered for inclusion in an HBP comes from published cost-effectiveness analyses. Approaches to quantifying uncertainty in the cost-effectiveness of interventions have been proposed and used, such as stochastic league tables, whereby interventions are ranked by their probability of being cost-effective (186). However, these fall short of guiding policymakers as to how they should respond to uncertainty, that is, whether this uncertainty matters to the resource allocation process and should be addressed by funding further research. As a result, research strategies may not be aligned with the evidential needs of HBPs. Schmitt et al. 2021 (187) proposed a framework and a companion VOI- HBP tool that tailors the application of the VOI methods to the evidence base that typically informs HBPs, namely secondary cost-effectiveness data. This can be used to inform deliberations about research priorities in LMIC countries so that the limited resources allocated to HBPs achieve greater gains in population health.

To illustrate the framework, Schmitt et al. 2021 (187) applied the tool to the evidence base that informed the Malawi Health Sector Strategic Plan 2017–2022. Application of the framework and VOI-HBP tool identified three interventions out of 21 to consider when establishing healthcare research priorities: ‘male circumcision,’ ‘community management of acute malnutrition in children,’ and ‘isoniazid preventive therapy in HIV +individuals,’ with a potential to avert up to 65,762, 36,438 and 20,132 net DALYs, respectively. It is anticipated that this framework will provide valuable quantitative insight to help shape the new HSSP (2022–2027) and support the National Health Research Taskforce in Malawi, recently established, in setting out research priorities. The VOI-HBP tool could help enable a wide application of the framework so that analysts within and supporting health ministries in LICs and LMICs can: (i) identify the interventions which should be prioritized for funding based on currently available evidence and (ii) establish research priorities to address evidential requirements pertaining to cost-effectiveness, using simply secondary cost-effectiveness data at hand and without undertaking any additional statistical analysis. In addition, the framework proposed can provide valuable input to deliberative research prioritization processes that consider a wider range of social objectives alongside health maximization.

Future Research

This chapter has highlighted various technical tools and methods to inform resource allocation within the health sector and beyond. Based on the recognition of the existence of resource constraints and the resulting opportunity costs of directing these limited resources towards an intervention or investment, these tools allow for the efficient allocation of physical and financial resources to attain country objectives. Below, we identify potential areas for future research in this area.
More comprehensive cost-effectiveness analysis: Cost-effectiveness analysis comparing a fuller range of alternative interventions relevant to the African context are needed in order to provide policymakers with adequate evidence for various resource allocation decisions. Alternatives include different modes of delivery, integration with different sets of services and different target populations. Consulting policymakers prior to designing trials and cost-effectiveness studies to identify the policy choice set can be a useful way to ensure the relevance and comprehensiveness of studies.

Improving the methods for HBP design: Current application of HBP design methods demonstrate how the constrained optimisation approach can be used to factor financial and human resource constraints into the design of the HBP. Future applications could consider other health system constraints such as bed capacity, outpatient ward capacity, and equipment. Further, current methods assume constant marginal cost and effects of interventions at different levels of coverage and in combination with different services. “Whole system and all-disease models” could help relax this assumption by allowing for the incorporation of economies of scale and scope. However, this will need to rely on more detailed cost-effectiveness analyses. Finally, while current methods only consider efficiency (health maximisation) in HBP design, future studies may consider the systematic inclusion of other objectives such as equity and financial protection.

Capturing the transition costs of HBP revision: HBP revision in most countries often assumes a blank slate from which to start. Current methods ignore the transition costs of removing and adding new interventions including staff training, updating provider payments mechanisms, dissemination of revised intervention guidelines, etc. Future studies should aim to explicitly capture these transition costs. Further, HBP design within the context of “whole system and all-disease models” can seek to capture the dynamic epidemiological effects and costs of various HBP choices.

Accounting for sub-national constraints in HBP design and HSS evaluation: Current application of HBP design methods assumes perfect divisibility of health system resources. In reality, however, resource constraints operate at a sub-national level and are either completely rigid or moveable at a cost. Accounting for sub-national constraints will allow for HBP design and HSS evaluation to be closer to reality.

Improved evidence on HSS: Some areas of research to improve evidence on HSS include - i) replication of the mathematical programming approaches utilised in the Uganda and Malawi case studies to other settings and modeling for a fuller range of health system inputs (e.g., of supply chains, pre-and in-service training, use of digital technologies, etc.); ii) cross-country regression analyses, to explore the causal impact of health systems inputs on measures of health outcomes in many countries and through time; iii) combining econometric evaluation of system-wide health policy changes with economic evaluation methods to allow for value-for-money assessment and iv) use of full health system modeling that captures the interplay of health care system capabilities, population knowledge, access and use of health care (e.g. “whole system and all-disease model” of the Malawi health system developed under Thanzi la Onse program 2017-21).

Considering physical health system constraints in HTA: Griffin et al. (2020) (188) demonstrate the importance and application of conventional HTA decision rules to less effective and less expensive interventions as opposed to more expensive and more effective interventions. This extension of HTA decision rules is particularly crucial in resource constrained settings. A further extension of the decision rules may be needed to account for the resource requirements (particularly those which are rigid in the short to medium term) of interventions.
Chapter 6: Incorporating equity into health financing dialogues

by Miqdad Asaria

Who benefits from health spending, by how much, and how much should we care?

National health systems are designed to fulfil a number of different and sometimes competing objectives ranging from ensuring countries have healthy and productive workforces in order to grow their economies to insuring individual citizens against the risk of financial impoverishment that may arise due to large unexpected expenditures on health care. Another often quoted but largely overlooked function of health systems is to promote health equity, i.e., to tackle the socially patterned differences in access to health care and health outcomes between different subgroups in the population. In this chapter, we look at the 5 ECSA focus countries and draw out what we know with regards to health equity and the priority it has vis-à-vis the other
objectives of the health system. For each of the countries, we outline what we know based on a rapid review of the academic and policy literature with respect to 10 key areas. A good understanding of these 10 areas in any given context provides the contextual information required to inform effective policy-making on health equity:

The detailed findings of our rapid review are listed in the sections that follow. We also provide an overview of the major tools that have been developed to measure, evaluate and promote health equity. In summary, we conclude that there has been limited work on health equity in any of the five focus ECSA countries. Two areas that have been addressed to some extent are benefit incidence analyses of particular health interventions and analyses of financial risk protection. However, even within these areas, there has been little consideration of who the equity-relevant subgroups in the population should be and how to trade off health equity with other objectives.

Given the dearth of research in this area, we propose to conduct our own pilot study (Appendix A2) to elicit the relative preferences of key stakeholders in the MOH, MOF, NGOs, and key international donor organizations with regard to health system objectives and equity relevant subgroups in these 5 focus ECSA countries as they pursue their plans to provide universal health coverage to their populations equitably. Having a better understanding of these key social value judgments will help to frame future health equity studies and ensure they resonate with in-country policymakers. We end the chapter by outlining a plan for this proposed pilot study.

Part A – Understanding the impact of health care investments on the distribution of health.

(i) Which sub-groups in the population are considered important to keep in mind when thinking about health equity?

Health varies across populations in myriad ways. The first important distinction to make in any given context is which health inequalities (inequalities between whom) we are most concerned about tackling and which are we happy to accept or ignore. At the heart of this distinction are a set of social value judgments regarding which of the social dimensions that health is patterned according to should be considered unfair and unjust and hence inequitable. These social value judgments vary from context to context, with one or more key social dimensions such as income, wealth, education, race, caste, occupation, class, religion, gender, geography, and citizenship status, amongst others, being considered relevant markers of unfair variation in different contexts (189).

In data-rich, high-income countries, social value judgments regarding fairness are typically used to frame the analysis of health equity. However, in data-constrained LMIC settings, populations are typically classified only by characteristics collected in the population census – a legacy of the colonial native population management infrastructure or characteristics collected in donor-funded cross-country surveys such as the USAID-funded DHS (Demographic Health Survey) or WHO’s WHS (World Health Surveys) - where cross-country comparability is prioritized over the collection of country-specific variables. Neither type of dataset has much regard for country-specific, indigenously grounded understandings of important distinctions within the population. These limitations have meant that health inequalities where they have been described in LMICs,
including in our five focus ECSA countries, have been described only in terms of what is available in these externally defined datasets, e.g., typically by rural versus urban geography, sex, age, education level, wealth or income in terms of a variety of asset or consumption indices (190), area-based socioeconomic status like gross regional product (191) or by vulnerability to particular diseases of specific interest to international donor organizations, most commonly HIV.

Whilst there are a wealth of studies declaring the crucial role of achieving health equity in our five focus countries and beyond, there appears to be a glaring gap in the literature dedicating careful thought to whom the equity relevant subgroups should be in each of the country-specific settings and hence which socially patterned health inequalities should be considered inequitable and therefore, a key target for policy intervention.

(ii) How is health distributed across these groups?

Once the key equity-relevant subgroups have been identified, the next step is to understand the existing health distribution across these subgroups. *This will provide a baseline to understand the extent of health inequity in the country, i.e., provides some sense of the magnitude of the challenge involved in order to achieve health equity.*

For the five ECSA countries that we are focussing on in this report, we were unable to find any published studies describing the magnitude of inequalities in overall population health outcomes such as life expectancy or healthy life expectancy. Even if such studies were to exist, it would be important to ensure that these descriptions of inequality are aligned to the equity-relevant subgroups that have been thoughtfully identified in conjunction with key country stakeholders as outlined in (i) above rather than arbitrary subgroups defined for the sake of convenience due to data availability or cross-country comparability.

(iii) How is access to health care patterned across these groups?

One key mechanism that can contribute to health inequity, where the design of the health system can play a major role in tackling this inequity, is providing *equal opportunities to access health care.* The most useful measures of access to health care would capture the degree of local availability of appropriately qualified clinical staff, hospital beds, and primary care appointments, all adjusted for the level of clinical need. Whilst such measures are typically available for population subgroups in data-rich high-income country settings, in LMICs such as our 5 focus ESCA countries, access to health care, particularly for population subgroups, is more often proxied by health care utilization. Such measures of utilization are covered in the following section on capturing the distribution of health benefits. *In general, there tends to be an “inverse care law”* (192) *with regard to access to health care, with those most in need of care least likely to have access to it.*

(iv) How are health benefits arising from health care provided by the national health system distributed across these groups?
Beyond simply capturing the distribution of access to health care, another important way of looking at the health system is understanding **who is benefitting from the health system and how this benefit is distributed across equity-relevant subgroups**. This is often done by means of benefit incidence analysis (BIA). Having such analyses at an intervention level comprise a key element in determining the impact of the interventions on health equity. BIAs are one area where there are several studies in many of our focus countries. The vast majority of studies measure benefits in terms of the quantity of health care used, whilst some more ambitious studies capture benefits in terms of health outcomes such as numbers of successful procedures performed, life years or QALYs gained, or deaths or DALYs averted (76).

Some studies focus on health care utilization across the whole population. Other studies focus on particular interventions delivered to specific subgroups in the population, such as MCH interventions (193–196) or treatments targeted towards people particularly vulnerable to or living with HIV, such as sex workers and men who have sex with men (197–200).

Studies use a range of dimensions across which to measure inequality - most commonly, wealth is measured in terms of asset indices. We found little justification in the studies arguing why inequality between groups characterized in the way they were should be considered particularly unfair, unjust, or inequitable – with the choice of inequality dimension typically justified in terms of data availability.

Ideally, such studies would be conducted on a wide range of clinical interventions, with health benefits measured in terms of DALYs averted or QALYs gained, and the distribution of benefits would be disaggregated by the equity relevant subgroups identified in (i) above.

**(v)** How is the health opportunity cost of marginal health expenditure distributed across these groups?

If we know the underlying distribution of population health, how health benefits arising from health care interventions are distributed, and how much they cost – the final element we need in order to understand the impact of the interventions on health equity is the distribution of the health opportunity cost. In other words, we need to understand what else would have been done with the budget used to fund an intervention had it not been funded, how much health would have been produced by this alternative budget allocation, and to whom would this health have accrued. This will give us a measure of who the losers are from this budget reallocation.

Combining this with the benefit incidence analysis that tells us who the winners are, gives us the net effect of funding the intervention on health distribution. Noting that by health distribution, we mean the health of the different equity-relevant population sub-groups identified in (i) above. Such analysis of the distribution of health opportunity costs has recently been conducted in high-income country settings (201) but, to the best of our knowledge, has yet to be conducted in LMICs. However, population-level health opportunity costs are being actively estimated in many of our focus countries (94), and these exercises can easily be extended to produce distributionally sensitive results.
Part B – Inequalities in health financing

(vi) How is the contribution to financing the national health system distributed across these groups?

An important consideration when thinking about health system financing is the distribution of contributions towards the health system and whether this distribution is progressive or regressive. Such analysis is valuable in order to understand the net impact of the health system on overall inequalities across different subgroups in the population. In contexts where public finances are funded by regressive taxation (typically sales taxes), as is the case in many LMICs where labor markets are largely comprised of informal work, it may be the case that income inequalities resulting from financing the health system are an important component of understanding the overall impact of the health system on inequalities. Kakwani indices are often calculated to capture this idea (61,202).

(vii) How are healthcare-related out-of-pocket payments, financial impoverishment, and/or catastrophic health expenditure distributed across these groups?

Whilst tackling ill health is the obvious function of the health system, another important function of the health system is to provide financial risk protection for the population when they get sick. One major source of financial risk arising from sickness is through out-of-pocket payments for health care. Such payments can be significant enough to be deemed catastrophic for some illnesses and some subgroups in the population and may even push some people into poverty. Understanding how out-of-pocket payments, catastrophic health expenditure, and financial impoverishment are distributed across the equity-relevant subgroups in the population provides a good indication of how successfully the health system is providing equitable financial risk protection to the population. This is an area that has been the primary focus of much health inequalities research in LMICs, with a number of relevant studies conducted in our focus ECSA countries (203–206). Again, the studies we identified disaggregate the level of financial risk protection across subgroups defined by geography or income/wealth – ideally, we would like to have such results disaggregated by the equity-relevant subgroups identified in (i) and understand the marginal impact of changes in the health budget on inequalities in financial risk protection.

Part C – Social value judgments required to evaluate trade-offs in policies to address health equity

(viii) What are the relative priorities given to health inequalities between different groups in the population?

Where a number of dimensions of health inequality are considered important, it may be the case that some dimensions are considered more important than others. For example, it may be the case that reducing inequalities across geographical regions is considered to be of higher priority than reducing inequalities across income groups. Understanding the social value judgment that underpins this relative prioritization allows us to pick amongst alternative policy options that
confers different amounts of benefits to different population subgroups. There are no studies that we know of that consider the competing claims of different equity relevant criteria in our 5 ECSA focus countries.

(ix) What are the relative priorities given to achieving health equity as compared to other objectives of the health system?

Health systems typically have multiple objectives, for example, improving population health overall, providing financial risk protection, and reducing health inequality, as depicted by the WHO UHC cube (153). There are often trade-offs to be made where progress on one dimension may come at the expense of sacrifices on another dimension. Understanding the social value judgments that underpin this relative valuation of dimensions in terms of each other is crucial if trade-offs are to be made. There are recent studies (207–209) that have begun to elicit societal levels of inequality aversion vis-a-vis health maximization (equity efficiency trade-offs) and use these in methods such as DCEA (distributional cost-effectiveness analysis) or MCDA (multiple-criteria decision analysis). However, we are unaware of any studies that have included financial risk protection as a component of this trade-off. Ideally, studies should be able to capture the relative importance of aggregate performance on each objective as well as the importance of reducing the inequity in performance in each of the dimensions. There are recent methodological ideas (210) of how to use extended cost-effectiveness analysis to use such relative priorities in policy-making, but little in terms of applied work in this area exists as yet.

(x) How do these social value judgments (i, viii, and ix) vary across key stakeholders, including the MOH, the MOF, and international donor organizations?

Finally, there are a number of key stakeholders who may have an important role in the design and implementation of the health system. These key stakeholders may or may not agree on the social value judgments that will underpin health policymaking – in terms of health equity, this would be in deciding who the equity relevant subgroups are in the population (as described in i), deciding relative priorities across these subgroups (as described in viii), and deciding the relative priorities of the different objectives of the health system (as describes in ix). These key stakeholders could include policymakers in the MoH, policymakers in the MoF, health-focused NGOs, and health-focused international donor organizations. Understanding where values overlap and where they diverge will be crucial in order to navigate the political economy of decision-making around health equity (211,212).

Overall, it should be apparent that a coherent approach to addressing the 10 points above: beginning with building an understanding of the context-specific social value judgments, followed by building an evidence base that speaks to these social value judgments, and finally combining this with a sophisticated understanding of the political economy of health equity policy making – provides a promising route to ensure that (1) health equity is appropriately considered in a context-sensitive manner and (2) policies to tackle health inequalities are supported by key stakeholders, and so given the best possible chance of success.
Part D – Methods to incorporate equity concerns into health resource allocation decisions

Whilst equity remains a common priority for health systems in LMICs, evidence on the equity impacts of policies is often scarce (213). In order to assist governments and policymakers in making equitable health resource allocation decisions, this section provides an overview of approaches that can be used to measure and analyze health equity, discuss their utility and limitations and provide examples of their application (214).

The existing inequalities in the health system, such as unequal access, utilization, or ill-health, can be measured using a range of metrics, like gap measures (absolute and relative), slope indices of inequality (215), regression analysis (e.g., decomposition analysis), concentration curves and indices (e.g., Gini coefficient, Wagstaff index, or Erreygers index), as well as health-related social welfare indices (e.g., health achievement index, Atkinson and Kolm inequality indices). Inequalities in the distribution of government health expenditures can be measured using benefit incidence analysis (BIA) (216). It can give a broad picture of inequality and can be conducted using commonly available data on healthcare utilization and expenditure (217–220). It consists of calculating the share of benefits received by individuals or groups (typically socioeconomic groups) from public health expenditures. However, they do not provide evidence on whether additional expenditure is likely to improve health inequalities. In such cases, a Marginal BIA (MBIA) can inform decisions about the impact of changing expenditure but requires additional data and statistical expertise (221). Needs-based resource allocation formulae also form a central policy tool for promoting both vertical and horizontal equity (222) and have been widely implemented across the world (see chapter 5). The principal technical challenge is to collect and utilize better data that will provide more accurate indicators of healthcare needs. An alternative method to traditional formulae when defining area-level allocations is the increasingly popular explicitly defined HBPs in resource-constrained settings (see chapter 5). Planners in the health sector may also pursue equity goals through the design of the health system, whether this is through financing mechanisms or the organization of health services. These could include introducing community-based or social health insurance schemes (223) or investing in primary care initiatives such as community health worker programs (224). To evaluate how specific interventions and policies are likely to affect inequalities, a number of tools from the economic evaluation literature can be applied. Distributional cost-effectiveness analyses (DCEAs) provide a thorough estimation of health inequality impacts (225), and extended cost-effectiveness analyses (ECEAs) can provide information across a range of outcomes – commonly financial risk protection and health (226). The evidence produced by ECEAs and DCEAs can feed into the deliberative processes used by health policy-makers to allocate health resources. Incorporating them into structured processes such as health equity impact assessments (227) is also feasible.

A systematic review by Yang et al. (2022) (191) identified studies where inequality impact had been included in economic evaluation in LMICs. These studies were conducted in a wide variety of countries, nevertheless concentrated in Asia (India, China, Pakistan, and Laos) and Africa (Uganda, Ethiopia, Zambia, and Malawi). There are many applications of ECEA in LMICs in Asia and Africa. A wide range of health interventions has been analyzed, including neonatal care (228), tuberculosis treatment (229), and rotavirus vaccination (230). Early applications of DCEA have been limited to high-income countries (225), although an analysis of rotavirus vaccination has also been developed for Ethiopia (231). Case studies by Arnold et al. 2020 (76) (equity impact of HBP in Malawi) and Love-Koh et al. 2020 (232) (equity impact of community-level

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25 This section has been adapted from Love-Koh et al 2020 and Yang et al 2022
intervention in Brazil) illustrate how the DCEA can be applied to LMIC contexts. In all three studies using DCEA in LMICs, the metric for assessing inequality impact was equally distributed equivalence (EDE) health, a single index measure of health that combines concerns for health improvement and inequality reduction (233). MBIU was developed with a view to examining benefit incidence across the public sector at the margin, although few applications (see (234)) have been made in the health sector. Most studies (235–240) have conducted subgroup analyses and reported the breakdown cost-effectiveness results to demonstrate the different effects across populations. A study in Ethiopia applied the Gini coefficient, a measure of inequality, to life expectancy to describe inter-individual and geographical inequality impacts (241).

Evidence suggests that whilst methodological advances have been made in equity-incorporated economic evaluation, there is still a big gap in applying these methods in practice in low-resource settings (191). The methods discussed in this chapter can be applied to whatever set of characteristics are relevant to society and can be used to help inform a range of health resource allocation decisions, conditional upon data availability and the decision-making context (214). For example, the incorporation of equity concerns in the design and implementation of HBPs is an emerging consideration in LMICs. The economic evaluation approaches we have described can be used to inform the design of future HBPs. Similarly, resource allocation formulae techniques may be useful in equitably allocating regional health budgets so that local budget holders hold sufficient resources to provide the local populace with the interventions in the HBP (15). Moreover, different combinations of the methods presented can be utilized depending on the type of equity objective that is being pursued (214).

Proposed next steps

This chapter highlights significant and fundamental gaps with regard to health equity in the context of overall health system priorities. At the heart of these gaps is a lack of clear understanding around what is meant by health equity in different contexts, how much priority health equity has vis-a-vis other health system objectives, and how these social value judgments vary across countries and across key stakeholders within each country.

As the first step in order to address these gaps, we propose to conduct a pilot study in conjunction with the ECSA-run in-country workshops where the findings from this initial report are fed-back to key stakeholders. This study will consist of a survey along the lines of that described below, with approximately 10-15 responses from each country from across MoF, MoH, foreign donor organizations, and in-country NGOs. Running this exercise will require a modest amount of additional funding in order to manage the ethics approval processes in each country, administer the survey, and collect and analyze the survey responses.

Once we have a better understanding of what health equity means in different contexts, to different stakeholders and the relative value of health equity vis-a-vis other health systems priorities, we will be much better placed to make detailed recommendations regarding how the fast-evolving health systems in these countries would best reflect these values. Such an exercise will include a political economy analysis of quick win opportunities where the key stakeholders are aligned and more challenging areas where there is a need for further discussions between the key stakeholders to achieve a consensus view as to the way forward.

The conclusion of our review is that achieving health equity is not a purely technocratic exercise; rather, understanding of what health equity comprises and how important it is are underpinned by crucial social value judgments. The current models of foreign donors and researchers imposing plans for UHC on low and middle-
income countries along with an embedded set of often opaque social value judgments are unlikely to be reflective of the context-specific social value judgments on the ground in these countries. We feel that it would be much more sensible and sustainable to assist countries in building their health systems in ways that reflect their own values. Understanding what these values are is a crucial first step in achieving this.

Chapter 7: Discussion and Conclusion

Human capital made inroads into the growth framework following the endogenous growth revolution and is identified as one of the most important contributors to economic growth (242–244). The contribution of health expenditure to economic development emanates from the health-led growth hypothesis (245). It considers health to be capital; therefore, investments in health can lead to an increase in labour productivity, thus an increase in incomes and a subsequent increase in the wellbeing of the population. Recently, there has been more evidence on the positive effect of health and healthcare investments on economic growth both in the short-run and in the long-run (246–248), and the importance of human capital for economic growth is re-emphasised by the World Bank (249) and WHO (250). The case for a positive effect of health on economic growth is strongest for less developed, post-demographic transition countries and with respect to children’s health and women’s health (251).

While countries have come a long way in better prioritising health; investment decisions around health have too often been viewed purely as a discretionary annual expenditure, not as a critical long-term investment with an economic return. Results in chapter 3 demonstrate that structural shocks to the macroeconomy like government spending shocks, health expenditure shocks, and exogenous financial shocks tend to affect the government budgeting across health and the other components of public expenditure in the short-run in the five sub-Saharan African countries. This implies that in countries with limited fiscal capacity, the different sub-components of public expenditures are rivalling sources of funding demands and that there’s a clear incentive
to favour expenditure on public investments with larger short-run multipliers compared to health expenditure, which may fail to adequately protect funding to the healthcare system. It is important to understand that investing in health is not a means to increase GDP or economic productivity; economic activity must be in service to human health. Thus, macroeconomic stability efforts must be balanced with greater investments in health and well-being.

While, on one hand, efforts to create more fiscal space for the health sector occur in the context of competing demands from other sectors and political contest (252), there is also increasing consensus that major assets for health and major determinants of ill-health are best addressed by the health sector coordinating with non-health sectors and actors (148). However, in reality, intersectoral action to improve health is challenging since the various stakeholders involved in its delivery may have different remits and objectives and may differ in how they value the impacts of the action. Thus, there is a much wider set of policy decisions to consider. In such cases, a ‘welfarist’ societal perspective is not sufficient (155,253); rather, a multi-sectoral societal decision-making approach which accounts for costs and effects falling on each sector is advocated. Walker et al. 2019’s framework describes how to conceptualise such a societal perspective, and seeks to provide actionable, evidence-based guidance on investments that rely on collaboration across sectors.

Most importantly, the health community should encourage investment in health using an intrinsic value perspective (254). This provides a wider picture of why investing in health could be important. Health appears to be very important in improving a nation’s economic well-being and productivity, making it important from an instrumental perspective (255,256). At the same time, health is also an end in itself. Put simply, even if there were zero returns to investing in health, one might still want to invest in it because it is foundational to what Sen refers to as “one’s ability to do and be” and the need to view development goals from a broader “capability” perspective which places value on indicators for their intrinsic significance (257,258).

While the need to raise more financial resources for health is a reality for all African countries, the question of efficient and transparent use of resources is of fundamental importance. Many countries could already achieve more with the existing resources through efficiency gains. Evidence in chapter 4, 5, and 6 inform decision-making and policy in allocating health care resources to improve population health and reduce health inequalities in eastern, central, and southern Africa. Chapter 4 summarises methods to estimate marginal productivity of the healthcare systems, which are valuable to further promote and encourage efficiency and relevance in the provision of health services in the ECSA region. They are critical in informing decisions around how to allocate the MoH budget for the provision of healthcare, communicating the value of expanding the budget for healthcare to the MoF, and understanding the value of increasing health production inputs. Chapter 5 reviews most common tools and frameworks to inform resource allocation, offering examples of their application and providing guidance to policy-makers on how they can be incorporated into decision-making frameworks to identify the best value for money in achieving what is important to the focus countries. These tools can contribute to advancing UHC goals in a way that makes the best use of the resources available and shows the value of committing additional resources for healthcare, addressing common challenges and trade-offs faced by diverse healthcare systems in SSA (75). Chapter 6 presents a detailed understanding of 10 key areas that provide the contextual information required to inform effective policy-making on health equity. It also provides an introductory overview of methods to assist governments and policymakers in making equitable health resource allocation decisions. The chapter ends with a plan for a novel pilot study to elicit the relative preferences of key stakeholders in the MOH, MOF, NGOs, and international donor organisations with regard to health system objectives and equity relevant subgroups.

Ultimately, the level of government funding for health is a political choice, and not a technical one (259). While the technical means are there, only countries with a high level of political will behind health financing
reform and actions have shown that governments can mobilise financial resources for health, even in complicated macroeconomic situations. A classic example of this is the establishment of Ghana's National Health Insurance Scheme (NHIS), which was pushed forward by strong political will that has survived democratic transitions in political power during the past two decades. Moreover, the political will of the national leaders to put health in forefront of development has been reiterated at the continental level through actions such as the Abuja Declaration of 2001 on increasing government funding for health, the Addis-Ababa Declaration of 2006 on community health in the African Region, the 2008 Ouagadougou Declaration on primary health care and health systems in Africa (260) and the 2012 Tunis Declaration on value for money, sustainability and accountability in the health sector. Thus, UHC reforms require a large investment of public financing and political capital by the government. Also, introducing and sustaining a publicly financed UHC system is simply good politics; not only is it objectively good for the country, it also gives the vast majority of the people something they explicitly want - i.e., “Right to health for all” (261).

References


44. UNICEF. 2020 Zimbabwe Health Budget Brief. 2020.


239. Rheingans R, Anderson JD, Bagamian KH, Laytnner LA, Pecenka CJ, Gilani SSA, et al. Effects of geographic and economic heterogeneity on the burden of rotavirus diarrhea and the impact and cost-


Appendix

A1: Endogenous variables for each country included in the panel SVAR model.
Figure A1.1 VAR data Eswatini
Figure A1.2. VAR data Malawi
Figure A1.3. VAR data Mauritius
Figure A1.4. VAR data Zambia
Figure A1.5. VAR data Zimbabwe
A2: Understanding national health system priorities in ECSA countries – pilot study survey.

The purpose of this short anonymous survey is to help us understand health system priorities as part of a scoping exercise that will be used to design future research on health financing in the ECSA region.

1. Country
   a. Eswatini
   b. Malawi
   c. Mauritius
   d. Zambia
   e. Zimbabwe
   f. Other, please specify …………………………………..

2. Please specify the organization that you work for
   a. Ministry of Finance
   b. Ministry of Health
   c. Foreign donor organization
   d. Non-Governmental Organisation
   e. Other

3. Rate the following objectives of the health system in terms of how important you feel they are on a scale of 0 to 100 – with 0 meaning not important at all and 100 meaning extremely important:
   a. Reducing out-of-pocket payments for health care and the chances that these payments can push patients and their families into poverty
      ………… (provide rating between 0 and 100)
   b. Improving the overall health of the population (for example, by providing health care that improves average life expectancy)
      ………… (provide rating between 0 and 100)
   c. Reducing the differences in life expectancy between those groups that are least healthy and those groups that are most healthy by allocating more health care resources to groups with lower life expectancy and less to groups with a higher life expectancy
      ………… (provide rating between 0 and 100)
   d. Reducing differences in access to health care between those groups who currently have better access to health care and those groups who have worse access to health care (for example, by investing more in health care provision in rural areas and investing less in urban areas)
      ………… (provide rating between 0 and 100)
   e. Treating conditions that prevent people from working or reduce their productivity at work
      ………… (provide rating between 0 and 100)
   f. Providing a wider range of health services, including access to cutting-edge treatments that are not currently available in the government-funded health system
      ………… (provide rating between 0 and 100)
4. The limited health care budget is unlikely to be able to fully meet all of the objectives we have outlined, so some will have to be prioritized over others. Please rank the objectives on a scale of 1 to 6 – with 1 indicating the most important objective and 6 indicating the least important:
   a. Reducing out-of-pocket payments for health care and the chances that these payments can push patients and their families into poverty
      ........... (provide ranking between 1 and 6)
   b. Improving the overall health of the population (for example, by providing health care that improves average life expectancy)
      ........... (provide ranking between 1 and 6)
   c. Reducing the differences in life expectancy between those groups that are least healthy and those groups that are most healthy by allocating more health care resources to groups with lower life expectancy and less to groups with a higher life expectancy
      ........... (provide ranking between 1 and 6)
   d. Reducing differences in access to health care between those groups who currently have better access to health care and those groups who have worse access to health care (for example, by investing more in health care provision in rural areas and investing less in urban areas)
      ........... (provide ranking between 1 and 6)
   e. Treating conditions that prevent people from working or reduce their productivity at work
      ........... (provide ranking between 1 and 6)
   f. Providing a wider range of health services, including access to cutting-edge treatments that are not currently available in the government-funded health system
      ........... (provide ranking between 1 and 6)

5. There are often systematic differences in health and access to health care between identifiable sub-groups within the population. For each of the following sub-groups in your country: (i) indicate whether or not you believe that such health inequalities exist; and (ii) rate on a scale of 0 to 100 how important you think it is for the health system to tackle these health inequalities with 0 meaning not important at all and 100 meaning extremely important:
   a. Men versus women
      i. Do you believe health inequalities exist between these groups?
         ........ (yes/no)
      ii. How important do you think it is for the health system to tackle these inequalities: ........
         (provide rating between 0 and 100)
   b. Rural versus urban populations
      i. Do you believe health inequalities exist between these groups?
         ........ (yes/no)
      ii. How important do you think it is for the health system to tackle these inequalities: ........
         (provide rating between 0 and 100)
   c. Rich versus poor people
      i. Do you believe health inequalities exist between these groups?
         ........ (yes/no)
ii. How important do you think it is for the health system to tackle these inequalities: ………
(provide rating between 0 and 100)

d. People from different ethnic groups or tribes
   i. Do you believe health inequalities exist between these groups?
      ……… (yes/no)
   ii. How important do you think it is for the health system to tackle these inequalities: ………
      (provide rating between 0 and 100)

e. People from different religious communities
   i. Do you believe health inequalities exist between these groups?
      ……… (yes/no)
   ii. How important do you think it is for the health system to tackle these inequalities: ………
      (provide rating between 0 and 100)

f. Local population versus migrants, internally displaced people and refugees
   i. Do you believe health inequalities exist between these groups?
      ……… (yes/no)
   ii. How important do you think it is for the health system to tackle these inequalities: ………
      (provide rating between 0 and 100)

g. People from the general population versus people from key (high-risk) populations (such as
gay men and other men who have sex with men, sex workers, transgender people, people who
inject drugs, and prisoners and other incarcerated people)
   i. Do you believe health inequalities exist between these groups?
      ……… (yes/no)
   ii. How important do you think it is for the health system to tackle these inequalities: ………
      (provide rating between 0 and 100)

h. Are there any other population subgroups for whom you think important health inequalities
exist in your country that could and should be addressed by the health care system – please
provide details of these groups below:

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6. Rank how important you feel it is to tackle any health inequalities that may exist between people from
the following groups in your country on a scale of 1 to 7 – with 1 indicating the most important and 7
indicating the least important:
   a. Men versus women
      ……… (provide ranking between 1 and 7)
   b. Rural versus urban populations
      ……… (provide ranking between 1 and 7)
c. Rich versus poor people
       …….. (provide ranking between 1 and 7)

d. People from different ethnic groups or tribes
       …….. (provide ranking between 1 and 7)

e. People from different religious communities
       …….. (provide ranking between 1 and 7)

a. Local population versus migrants, internally displaced people, and refugees
       …….. (provide ranking between 1 and 7)

b. People from the general population versus people from key (high-risk) populations (such as gay men and other men who have sex with men, sex workers, transgender people, people who inject drugs, and prisoners and other incarcerated people)
       …….. (provide ranking between 1 and 7)
### A3: Short-listed indicators for ALM health financing progress tracker

<table>
<thead>
<tr>
<th>Objective</th>
<th>Theme</th>
<th>Indicators</th>
<th>Time Horizon</th>
<th>Process/Outcome</th>
<th>Qualitative/Quantitative</th>
<th>Data Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>More money for health</td>
<td>Raise</td>
<td>1 [Year on year] Change in tax effort (tax collected/tax capacity)</td>
<td>Mid-term</td>
<td>Process</td>
<td>Quantitative</td>
<td>IMF Reports and database</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Trends in tax/GDP ratio</td>
<td>Short-term</td>
<td>Process</td>
<td>Quantitative</td>
<td>IMF WEO</td>
</tr>
<tr>
<td></td>
<td>Allocate</td>
<td>3 Increased prioritisation of health spending as the public expenditure grows (Change in GGHE-D/GGE)</td>
<td>Short-term</td>
<td>Outcome</td>
<td>Quantitative</td>
<td>GHED (WHO), IHME + IMF</td>
</tr>
<tr>
<td></td>
<td>Spend</td>
<td>4 Ministry of Health budget utilisation/execution rate</td>
<td>Short-term</td>
<td>Process</td>
<td>Quantitative</td>
<td>PER, National sector documentation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 PEFA indicator: &quot;Predictability of in-year resource allocation&quot;</td>
<td>Mid-term</td>
<td>Process</td>
<td>Qualitative</td>
<td>PEFA (WB) (Adapted to sector)</td>
</tr>
<tr>
<td>More health for the money</td>
<td>Efficiency</td>
<td>6 Percentage of government domestic health expenditure (GGHE-D) spent on salaries/ wages</td>
<td>Mid-term</td>
<td>Process</td>
<td>Quantitative</td>
<td>NHAs, PHCPI, GHED (WHO)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7a Is the country participating in a pooled procurement initiative to access medicines and commodities at the best pricing available to them?</td>
<td>Short-term</td>
<td>Process</td>
<td>Qualitative</td>
<td>National documentation, interviews with KII/KEs, literature, Other sources</td>
</tr>
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<tr>
<td><strong>Effectiveness</strong></td>
<td><strong>Mid-term</strong></td>
<td><strong>Outcome</strong></td>
<td><strong>Quantitative</strong></td>
<td>National documentation, interviews with KII/KEs, literature, Other sources</td>
<td></td>
<td></td>
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<tr>
<td>7b</td>
<td>Proportion (%) of pharmaceutical [public] procurement volume ($%$) that is generic</td>
<td>Mid-term</td>
<td>Outcome</td>
<td>Quantitative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Percentage of total [public] health spending allocated to Primary Health Care (PHC)</td>
<td>Short-term</td>
<td>Process</td>
<td>Quantitative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Percentage of government health expenditure that goes to medicines</td>
<td>Mid-term</td>
<td>Process</td>
<td>Quantitative</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement and Monitoring</strong></td>
<td><strong>Short-term</strong></td>
<td><strong>Process</strong></td>
<td><strong>Qualitative</strong></td>
<td>National documentation, interviews with KII/KEs, scientific literature, Other sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Does the country use a priority setting mechanism to allocate health resources (e.g. a transparent and open priority setting dialogue, an HTA, or similar)? If yes, do they use this priority setting process used for (i) determining which medicines appear on their Essential Medicines List and (ii) determining a Minimum Benefits Package</td>
<td>Short-term</td>
<td>Process</td>
<td>Qualitative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Is provider performance monitored? If yes, is performance monitoring linked to purchasing decisions?</td>
<td>Mid-term</td>
<td>Process</td>
<td>Qualitative</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td><strong>Mid-term</strong></td>
<td><strong>Outcome</strong></td>
<td><strong>Quantitative</strong></td>
<td>Country DH Surveys</td>
<td></td>
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</tr>
<tr>
<td>12</td>
<td>Access to X service by wealth quintile (e.g. RMNCH).</td>
<td>Mid-term</td>
<td>Outcome</td>
<td>Quantitative</td>
<td></td>
<td></td>
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<td>13</td>
<td>RMNCH Coverage Index</td>
<td>Mid-term</td>
<td>Process</td>
<td>Quantitative</td>
<td></td>
<td></td>
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<tr>
<td><strong>Equity in Financing</strong></td>
<td><strong>Mid-term</strong></td>
<td><strong>Process</strong></td>
<td><strong>Qualitative (TBD)</strong></td>
<td>National documentation, interviews with KII/KEs, scientific literature, Other sources</td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>Are Benefit Incidence Analyses (BIA) of public spending in health carried out routinely with good quality data?</td>
<td>Mid-term</td>
<td>Process</td>
<td>Qualitative</td>
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<td></td>
<td>Placeholder: Concentration Analysis of Resource Pools</td>
<td>Mid-term</td>
<td>Outcome</td>
<td>Quantitative (TBD)</td>
<td>National documentation, DHIS</td>
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<td>Financial Protection 16</td>
<td>Medical Impoverishment (proportion of population pushed below poverty line ($1.90) by OOPE (WHO / WB)).</td>
<td>Mid-term</td>
<td>Outcome</td>
<td>Quantitative</td>
<td>Country DH Surveys (TBD)</td>
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<td>17</td>
<td>Year 1: &quot;What are the key drivers of OOPs&quot;. Thereafter, measure the change in these key drivers of OOPs.</td>
<td>Long-term</td>
<td>Outcome</td>
<td>Quantitative</td>
<td>Country DH Surveys (TBD)</td>
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<tr>
<td>Leadership, Governance &amp; Data</td>
<td>Leadership 18</td>
<td>In line with the AU ALM Declaration commitments, has the government expressed in policy and/or legislation its commitments to (a) prioritise increased domestic investment in health, (b) improve the effectiveness of health spending, (c) strengthen efforts to improve the efficiency of health financing, and to better align (d) development partner and (e) private sector efforts to national, regional and continental priorities?</td>
<td>Short-term</td>
<td>Process</td>
<td>Qualitative</td>
<td>National documentation</td>
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<td>19</td>
<td>Is there an up-to-date health financing policy statement guided by goals and based on evidence?</td>
<td>Short-term</td>
<td>Process</td>
<td>Qualitative</td>
<td>National documentation</td>
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<tr>
<td>Governance</td>
<td>20</td>
<td>Head of State / Government has a formal mechanism/structure to (a) improve the quality of collaboration between MoF/MoH and other relevant ministries on health financing reform and (b) to ensure that MoF/MoH jointly coordinate the alignment by partners with national plans and budgets?</td>
<td>Mid-term</td>
<td>Process</td>
<td>Qualitative</td>
<td>National documentation, interviews with KII/KEs, scientific literature, Other sources</td>
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<td>21</td>
<td>Worldwide Governance Indicators (WGI) project indicator: &quot;Government effectiveness index&quot;</td>
<td>Mid-term</td>
<td>Process</td>
<td>Quantitative</td>
<td>World Bank (WGI)</td>
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<tr>
<td>Data Systems</td>
<td>22</td>
<td>Is health financing information systematically used to monitor, evaluate, and improve policy development and implementation?</td>
<td>Long-term</td>
<td>Process</td>
<td>Qualitative</td>
<td>Matrix Indicator. National documentation, interviews with KII/KEs, scientific literature, Other sources</td>
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<td>23</td>
<td>World Bank: Statistical Capacity Indicator (SCI) score</td>
<td>Long-term</td>
<td>Outcome</td>
<td>Quantitative</td>
<td>World Bank</td>
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