

SIERRA LEONE

PUBLIC EXPENDITURE REVIEW 2021

Improving Quality of
Public Expenditure in Health



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ABBREVIATIONS AND ACRONYMS

ANC	Antenatal care
ARI	Acute respiratory infection
BCC	Budget Call Circular
CHA	Community Health assistant
CHC	Community health Center
CHO	Community Health Officer
CHP	Community Health Post
CHW	Community Health Worker
CMO	Chief Medical Officer
CMR	Child Mortality Rate
DALYs	Disability Adjusted Life years
DHMT	District Health Management Team
DHS	Demographic and Health Survey
DMO	District Medical Officer
DP	Development Partner
DPPI	Directorate of Policy Planning and Information
GDP	Gross Domestic Product
GHE	Government Health Expenditures
GoSL	Government of Sierra Leone
HDI	Human Development Index
HFSA	Health Financing System Assessment
HMIS	Health Management Information System
ICT	Information and Communication Technologies
IEC	Information, Education, and Communication
IFMIS	Integrated Financial Management Information System
ILO	International Labor Organization
IMF	International Monetary Fund
IMR	Infant Mortality Rate
LC	Local Council
LGBCC	Local Government Budget Call Circular
LIC	Low Income Country
MDAs	Ministries Departments and Agencies
MMR	Maternal Mortality Rate
MOE	Miscellaneous Operational Expense
MoF	Ministry of Finance

MoHS	Ministry of Health and Sanitation
MLGRD	Ministry of Local Government and Rural Development
NHSSP	National Health Sector Strategic Plan
NRA	National Revenue Authority
OOP	Out-of-pocket payment
PHC	Primary Health Care
PER	Public Expenditure Review
PFM	Public Financial Management
PHU	Peripheral Health Unit
PNC	Postnatal Care
PPP	Purchasing Power Parity
PS	Permanent Secretary
SARA	Service Availability and Readiness Assessment
SLDHS	Sierra Leone Demographic and Health Survey
SLSDI	Sierra Leone Service Delivery Indicators
SLeSHI	Sierra Leone Social Health Insurance
THE	Total Health Expenditure
TGE	Total Government Expenditures
UHC	Universal Health Coverage
UNICEF	United Nations Children's Fund
USD	United States Dollar
WDI	World Development Indicators
WEO	World Economic Outlook
WHO	World Health Organization
WHS	World Health Statistics

KEY MESSAGES

Ensuring that “All people in Sierra Leone have equitable access to affordable quality health care services and health security without suffering undue financial hardship” is an overarching goal of the government of Sierra Leone (GoSL). To help advance this goal, GoSL must take concrete steps toward addressing constraints to effective, efficient and equitable public health expenditures that have been identified through this Health Sector Public Expenditure Review (PER). The main findings are the following: unpredictable levels of health expenditure; low capital expenditure, resulting in inadequate availability of health infrastructure; high expenditure on personnel emoluments, crowding out spending on goods and services such as essential drugs and medical supplies; most capital expenditure going toward transfers to other agencies of general government for purposes which are unclear; imbalance between spending on hospitals (secondary and tertiary care services) and primary health care; budgetary allocations to Local Councils for primary health care delivery not tied to performance targets; little or no spending dedicated to infectious diseases due to unsustainable reliance on donor support; high budget execution rate not commensurate with performance in terms of health outcomes; weak district-level public financial management capabilities; and uneven distribution of healthcare resources across the country. Finally, it was concluded that improved efficiency in health care services is likely to increase care-seeking for certain health conditions and maternal care, increase early initiation of breastfeeding and reduce child-mortality.

EXECUTIVE SUMMARY

Sierra Leone is a small, low-income West African country of approximately 7.65 million people. Over the past decade, the country has made gains on several health indicators, but it faces huge challenges. Life expectancy at birth increased from 39 years in 1990 to 54 years in 2017. Maternal mortality ratio (MMR) decreased from 1,165 per 100,000 live births in 2013 to 717 per 100,000 live births in 2019. Stunting among children under the age of five years reduced from 45 percent in 2005 to 29.5 percent in 2019. Infectious diseases remain the leading causes of morbidity and mortality, but non-communicable diseases appear to be trending upward.

Objectives of the Public Expenditure Review (PER)

The objective of the PER was to assess public expenditure on health over the 2015–2019 period to inform policymakers of the effectiveness, efficiency, and equity of health expenditures in Sierra Leone. The specific objectives were to: (i) analyze the levels and composition of health expenditures in order to ascertain how well Sierra Leone is doing relative to comparable countries; (ii) document sources of funding for the health sector; (iii) analyze expenditures by sector, including expenditures by the central government; (iv) analyze expenditures by economic classification (recurrent vs. capital expenditure), by function, and by program; (v) analyze budget execution performance (approved budget vs. actual); and (vi) make recommendations for improving the quality of health spending by improving its effectiveness and efficiency.

Methodology and Limitations

Findings of this review are principally informed by information gathered by a three-pronged approach. Key informants, comprising Ministry of Health and Sanitation (MoHS) and Ministry of Finance (MoF) officials at the central and local levels were interviewed to gather quantitative and qualitative data. Development partners and other stakeholders were consulted. Documents were also reviewed.

The data collection exercise was not without challenges. Data quantity, quality and timeliness pose significant challenges in conducting data-intensive studies such as a PER. The evolving COVID-19 pandemic imposed limitations on stakeholder consultations as well. In addition, there was limited data availability for some metrics.

Health Policies and the Healthcare Delivery System

Government of Sierra Leone's (GoSL) overarching goal is to achieve Universal Health Coverage (UHC) for all Sierra Leoneans by 2030. The Sierra Leone 2021–2025 National Health Policy (NHP), 2021–2025 National Health Sector Strategic Plan (NHSSP) and other policies, strategies and implementation plans are formulated and implemented to guide healthcare financing and delivery. While the health care delivery system is coordinated centrally by the MoHS, District Health Management Teams (DHMTs) oversee primary and secondary healthcare at facilities across the districts. Tertiary care is offered only at specialized and advanced hospitals in Freetown and other regional capitals. The private health sector in Sierra Leone consists of the formal and informal providers.

Health Status

From 1990 to 2017, life expectancy at birth increased from 39 years in 1990 to 54 years in 2017. Maternal mortality ratio (MMR) decreased from 1,180 in 2015 to 1,120 in 2017. Prevalence of stunting among children under the age of five years decreased from 45 percent in 2005 to 29.5 percent in 2019. But Sierra Leone's life expectancy remains one of the lowest globally. Compared with some of its neighbors Burkina Faso, Guinea, Liberia and other peers, Sierra Leone also performs worse on other health indicators. The country's healthcare system faces challenges. Population is growing at a rate of 2.1 percent a year due mainly to a high fertility rate (total fertility rate of 4.2 births per woman in 2019) and a 21 percent contraceptive prevalence. Disease burden is starting to shift from infectious diseases to long-term chronic conditions, diseases associated with poor lifestyle behaviors. The GoSL must ensure that the healthcare system anticipates the health needs of the growing population to protect it from being overwhelmed.

Health Systems Performance

Sierra Leone has an average of 1.8 health facilities per 10,000 population, which is a better facility density than most of its immediate neighbors. However, the country's average

in-patient and maternity bed density per 10,000 population of 12 and 8 respectively are below the WHO recommended thresholds. Sierra Leone compares relatively well to other low-income countries (LICs) regarding nurse/midwife workforce ratio (1/10,000 population), but it has a very low proportion of physicians to population ratio, below 0.05/10,000 population. While 64.3 percent of the 24 tracer drugs were available in 2018, only 32.2 percent of facilities had all tracer drugs available. Overall, 96.3 percent of all vaccines were available in Sierra Leonean facilities, which have vaccine storage capacity. Shortcomings of the Health Management Information Systems (HMIS) are a major drawback on the country's health system performance. The HMIS faces a lack of requisite human resources, lack of information and communication technology (ICT) equipment, unreliable connectivity, and poor power supply.

Utilization of Health Services

The majority of Sierra Leoneans (six out of 10) who reported sickness or injury visited a health care facility or health service provider. The likelihood to visit to a health care facility or a medical practitioner was 60 percent for both rural and urban populations. More children 0–4 years old visited a health facility or medical practitioner for an illness or injury than any other age group. More females between 30 and 34 years visited a health facility or medical practitioner than other women of child-bearing age. While there were differences by locality, age and education level of the mother, 83 percent of babies were delivered in health care facilities in 2019. Yet 72 percent of women report at least one problem in personally accessing health care. The most common problem is inability to get money for treatment. Data were not available to assess whether people were satisfied with their health services.

Sources of Financing Healthcare

General government allocations, donor financing and out-of-pocket spending are the main sources of healthcare financing. In 2018, household out-of-pocket payments, accounting for approximately 45 percent of total health expenditure, was the highest source of healthcare financing, followed by donor spending of about 26 percent and 10 percent from GoSL

sources. Seventy percent of the household expenditures go toward drugs.

Level of Health Expenditures

Public health spending in Sierra Leone is higher than its West African sub-regional neighbors, but health outcomes are lower. Sierra Leone's general government expenditure on health (GGHE) as a percentage of GDP is 1.56 percent, which is higher than the West African sub-regional average of 1.37 percent. In terms of the share of total government spending in 2019, MoHS (6.49 percent) was second to the Ministry of Education, Technology and Science (11 percent) compared with other ministries, departments, and agencies (MDAs).

Economic Composition of Health Expenditures

Recurrent and capital expenditures are the two main categories that make up the economic composition of health expenditure. Recurrent expenditure comprises personnel emoluments, goods and services and current transfers (grants). On the other hand, capital expenditure consists of capital transfers and domestic capital spending. Recurrent expenditure consistently surpasses capital expenditure. For the five-year period under review, recurrent and capital spending combined was Le1.43 trillion. Ninety percent (Le1.28 trillion) of the total was devoted to recurrent expenditure, while 10 percent (Le147.71 billion) was spent on capital investments.

Functional Composition of Health Expenditures

GoSL's health expenditure benefitted tertiary and secondary care. An average total of Le282.69 billion was spent on the key functions to address healthcare needs for the period under review. Le207.09 billion, accounting for 73 percent of the average total, went to administrative services. A combined average of 12 percent (Le35.79 billion) of expenditure was directed towards secondary and tertiary care services. Le9.21 billion was devoted to primary health care (PHC), which represented only three percent of the total. The GoSL

must pay special attention to PHC since it plays a key role in achieving Universal Health Coverage (UHC). Stand-alone programs such as Maternal and Child Health, STI/HIV/AIDS Prevention and Control, and Malaria Prevention and Control are not adequately funded by the GoSL due to overdependence on external public financing by donors. Gavi, the World Bank, WHO, UNICEF, JICA, CDC, Global Fund, and IsDB provided over 93 percent of off-budget financing for these and other projects in the sector, which raises the issue of sustainability.

Budget Execution Performance

MoHS's average budget execution rate is 98.2 percent for the 2015–2019 period, but there is room for improvement in terms of health outcomes. MoHS's capital and recurrent expenditures show mixed results regarding execution performance. While capital expenditure was underspent by Le70.4 billion (32 percent), recurrent expenditure was overspent by Le51.2 billion (over four percent). Capital expenditure outturns, however, exceeded the approved budget from 2015–2017. It is unusual for a developing country to overspend its capital expenditure. Deficiencies in budget preparation, such as failure to take account of existing commitments, could likely have caused the overruns in those three years. On the other hand, aside from 2019 when the highest outturn of Le391.2 billion was recorded for recurrent expenditure, it fell short of the approved budget each year. The pattern of Sierra Leone's recurrent expenditure in terms of budget execution contrasts sharply with trends in other developing countries.

Technical Efficiency and Equity Issues

The average technical efficiency score of health facilities in Sierra Leone was 65 percent, according to a 2019 World Bank commissioned study. The technical efficiency score is not an absolute performance, but one that ranks facilities performance against their peers. Hospitals were found to have the highest average efficiency score of 90 percent, followed by Community Health Centers (CHCs), 76 percent, and Community Health Posts (CHPs), 61 percent. Eliminating

inefficiencies in the sector, particularly at the district level, would likely increase care-seeking for certain health conditions (acute respiratory infection among children) and maternal care, increase early initiation of breastfeeding and reduce child-mortality.

As a key objective, the review sought to examine equity issues to understand whether public health spending targets service provision and utilization interventions for the poor and other disadvantaged segments of the population (age, gender, educational attainment, and geographical areas). Data unavailability made it unfeasible to carry out a systematic analysis in this regard. Alternatively, in most parts of the report, and particularly Section 6, the team documents the inequitable distribution of health care resources. Availability of health personnel, infrastructure and other inputs differs across regions and districts with rural areas receiving a short shrift. For instance, the ratio of average health personnel who regularly see patients in urban areas compared to rural communities was nearly five to one (5:1). The uneven resource distribution and socio-economic factors drive disparities in access and usage of health services as well. As a case in point, urban households can afford to spend an average of 12.4 percent of their household consumption expenditure on health compared to 8.4 percent by their rural compatriots. More research (such as benefit incidence analysis) will be needed to determine whether public health spending is meaningfully benefitting the poor and disadvantaged groups.

Key Findings and Recommendations

The PER has identified several constraints that limit the effectiveness, efficiency, and equity of public health expenditures in Sierra Leone. Key findings include:

Key findings

- a) Unpredictable levels of health expenditure, which complicate planning and informed decision-making.
- b) Low capital expenditure has led to inadequate availability of health infrastructure, which has a serious impact on the efficient delivery of health services.
- c) Higher expenditure on personnel emoluments, crowding out spending for goods and services such as drugs and medical supplies.
- d) Inadequate spending on essential drugs results in shortages in health facilities.
- e) Eighty-eight percent of capital expenditure was on capital transfers to other agencies of general government. However, the basis upon which the funds were transferred and for what purposes are unclear.
- f) Imbalance between spending on hospitals (secondary and tertiary care services) and primary health care, although sector strategies prioritize primary health care.
- g) Budgetary allocations to local councils for primary health care delivery are not tied to performance targets.
- h) Little or no government spending is dedicated to infectious diseases, which are the leading causes of morbidity and mortality, due to unsustainable reliance on donor support.
- i) High budget execution rate not commensurate with performance in terms of health outcomes.
- j) DHMTs have weak public financial management (PFM) systems as they lack effective financial management, procurement, internal audit, M&E, HMIS, and asset management capabilities.
- k) Improved efficiency is likely to increase care-seeking for certain health conditions and maternal care, increase early initiation of breastfeeding and reduce child-mortality.
- l) High spending inequities lead to uneven distribution of health facilities across the country.

Policy Matrix of Recommended Reforms

Challenge	Recommendation
Low capital spending vs. recurrent	<p>Objective: Improve resource allocation and expenditure management</p> <p>Rationalize capital expenditure and recurrent expenditure with a view to improving capital expenditure to enhance the state of health infrastructure.</p>
High personnel emoluments vs. goods and services	<p>Objective: improve service delivery by ensuring regular supplies at all levels of the health services delivery systems</p> <p>Address the imbalance between spending on salaries and goods and services to ensure funds are available for procurement of the needed supplies to health facilities.</p>
Weak fiduciary management systems at the district level	<p>Objective: Strengthen fiduciary management systems.</p> <p>Strengthen the capacity of DHMT procurement and accounting staff to effectively manage the health budget.</p>
Imbalance between allocations to hospitals (secondary and tertiary care) and primary health care services.	<p>Objective: Increase allocation to primary health care (PHC)</p> <p>Rationalize allocation of the budget in favor of PHC, with an eye toward achieving universal health coverage.</p>
Inefficient health facilities	<p>Objective: Improve efficiency of health facilities</p> <p>Eliminate inefficiencies by ensuring that district health facilities make decisions based on outcomes produced and inputs used. A performance-based contracting mechanism that will provide funding to DHMTs based on measurable results could be one way to achieve it.</p>

INTRODUCTION

Sierra Leone is a small West African country of approximately 7.65 million population (World Bank, World Development Indicators [WDI] 2020), bordered by Guinea, Liberia, and the Atlantic Ocean. The country is divided into four administrative regions: The Northern, Eastern and Southern provinces, and the Western Area, where the capital city of Freetown is located. About 36 percent of the population lives in urban areas.

With a real gross domestic product (GDP) per capita of US\$ 473 in 2018 (World Bank, WDI 2020), **Sierra Leone is classified as a low-income country** and one of the lowest income countries in West Africa. Efforts to boost economic development were severely compromised by the 1990–2001 civil war and the 2014–2016 Ebola epidemic. The economic situation has been exacerbated by the COVID-19 pandemic. GDP growth rate declined by 21.1 percent in 2015. The economy subsequently saw an upturn since 2016, when growth rate was 6.1 percent then fell back to 3.4 percent in 2018 (World Bank, WDI 2020).

Low revenues have resulted in substantial fiscal deficits and rising public debt. Domestic revenue (11 percent of GDP, 2018) is lower than the sub-Saharan African average (15 percent), and those of comparator countries, Liberia, and Guinea. Its main source is income tax (33–43 percent), goods and services tax (22–26 percent), local council revenues (around 6 percent) and mining revenues (around 5 percent). Expenditures have been higher than domestic revenues for a decade, leading to fiscal deficits, which peaked in 2017 (8.8 percent). Government expenditure for wages is high (averaging 40 percent of total spending over the period), followed by goods and services (27 percent), capital expenditures (17 percent) and transfers and grants (6–7 percent). The fiscal deficit has declined significantly from a high of 8.8 percent in 2017, but has increased once again in 2020 due to COVID. Public debt has continued to grow, exceeding 70 percent by 2019. The current Government is committed to strengthening expenditure management and mobilizing domestic revenue to gradually reduce the deficit and debt burden over time.

Social sectors are among those that have suffered from the poor macroeconomic performance. Sierra Leone ranked 180th out of 187 countries in the Human Development Index (HDI) in 2011. Poverty remains widespread with more than 60 percent of the population living on less than US\$ 1.25 a day. Over 60 percent of the rural population lives in poverty compared to 30 percent of urban dwellers. Educational attainment and literacy rates among the working-age population are low, especially amongst women and in rural areas. According

to an ILO 2014 Labor Force Survey, 56.7 percent of the working-age population cannot read or write.

1.1. Objectives of the PER

The objective of the PER is to assess public expenditures on health to inform policymakers of the effectiveness, efficiency, and equity of health expenditures in Sierra Leone. The specific objectives are: (i) to analyze the levels of health expenditures in order to ascertain how well Sierra Leone is doing relative to comparable countries, including analysis of expenditures by sector as well as expenditures by the central government;; (ii) to document sources of funding for the health sector; (iv) to analyze composition of health expenditures by economic classification (recurrent vs. capital expenditure), by function, and by program; (v) to analyze budget execution performance (estimates vs. actual); and (vi) to make recommendations for improving the effectiveness, efficiency and equity of public health expenditures.

1.2. Methodology and Data Limitations

The review was based on information drawn from primary and secondary sources. Primary-source information was collected in two ways: first, through direct interviews with (a) Government officials, principally the Ministry of Health and Sanitation (MoHS) and the Ministry of Finance (MoF), (b) development partners (DPs), and (c) health service users interviewed at health facilities. Second, quantitative, and qualitative information was collected directly from Local Councils (LCs), District Health Management Teams (DHMTs) and

health facilities through questionnaires administered by twenty-eight field enumerators who covered all the districts.

Information from secondary sources was drawn from a desk review of documents made available by the Government, the World Bank Group (WBG) and other stakeholders.

The documents give first-hand information on the state of the health sector and provide an insight into the issues facing the health sector. Additional data were drawn from WDI, BOOST and from WHO (see annex 1 for a detailed description of the methodology).

There were challenges in data collection for both the primary and secondary data sources. An important challenge in conducting data-intensive studies such as the PER is the quantity, quality, and timeliness of data. The data collection process has not been as smooth as ideal, and the advent of the COVID-19 pandemic disrupted stakeholder consultations. In addition, for most indicators, data availability for the year 2019 is limited.

1.3. Organization of the Report

The PER is organized into 8 sections. Following the Introduction, Section 2 reviews Sierra Leone's health policies and healthcare delivery system. Section 3 presents Sierra Leone's health status, including demographics, outcomes internationally benchmarked, and the burden of disease. Section 4 assesses the country's health system performance and utilization of health services. Section 5 discusses the sources of healthcare financing. Section 6 provides a review of health expenditures by analysing: (i) level of health spending, composition of health expenditures, and budget execution performance. Section 7 considers technical efficiency and equity issues and Section 8 provides conclusions and recommendations of the study.

HEALTH POLICIES AND HEALTHCARE DELIVERY SYSTEM

2.1. Overview of Government Policies and Priorities

The health system of Sierra Leone has numerous policies and strategies that are aligned with the government's priority of improving the health and wellbeing of the Sierra Leonean population. Implementing these policies and strategies contributes to achieving the 2030 global Universal Health Coverage (UHC) target by ensuring that Sierra Leoneans have access to affordable, quality health care irrespective of financial status (MoHS 2015). This section provides an overview of the main Sierra Leone health strategies that underpin health spending over the period of covered in this review.

Sierra Leone's Third Generation Poverty Reduction Strategy Paper (2013–2018) was termed the Agenda for Prosperity and it provided a vision for middle-income status by 2035. It comprised the following pillars: diversified economic growth; managing natural resources; accelerating human development; international competitiveness; labour and employment; social protection; governance and public sector reform; and gender and women's empowerment. Implementation was led by Central Government in collaboration with MDAs, local councils, civil society and non-governmental organizations.

Sierra Leone's National Health Sector Strategic Plan (NHSSP) 2017–2021 provided a vision and a mission to the sector, leveraging what was learned during the Ebola epidemic to advance health sector performance. It covered eight pillars: leadership and governance; service delivery; human resources for health; health financing; medical products and health technologies; health information systems and research; health security and emergencies; community engagement and health promotion. It harmonized over twenty sub-sector documents in an attempt to advance sector performance. It proposed mid-year and annual sector reviews with all the key government stakeholders and partners to assess progress and ensure its successful implementation during the five-year period. (Table 1).

2.2. Sierra Leone Health Care Delivery System

The health care delivery system in Sierra Leone is coordinated centrally by the MoHS. The MoHS is responsible for the regulation, resource mobilization, provision of health services and quality assurance, health research, policy formulation and implementation,

TABLE 1 Selected Sub-Sector Policies and Strategies during the Time Period of the Review

Description	Type	Timeline						
		2015	2016	2017	2018	2019	2020	2021
HIV/AIDS	Strategy		<				>	
TB & Leprosy	Strategy		<				>	
Malaria	Strategy		<				>	
Insecticide Resistance	Strategy			<			>	
RMNCAH	Strategy			<				>
Family Planning <— under development	CIP							
Vaccines	Strategy			<				>
Nutrition	Strategy			>				
Anemia <— under development	Strategy							
Mental Health	Policy							
NTDs	Strategy		<				>	
HRH	Strategy			<				>
HRH	Policy							

Source: NHSSP (2017–2021)

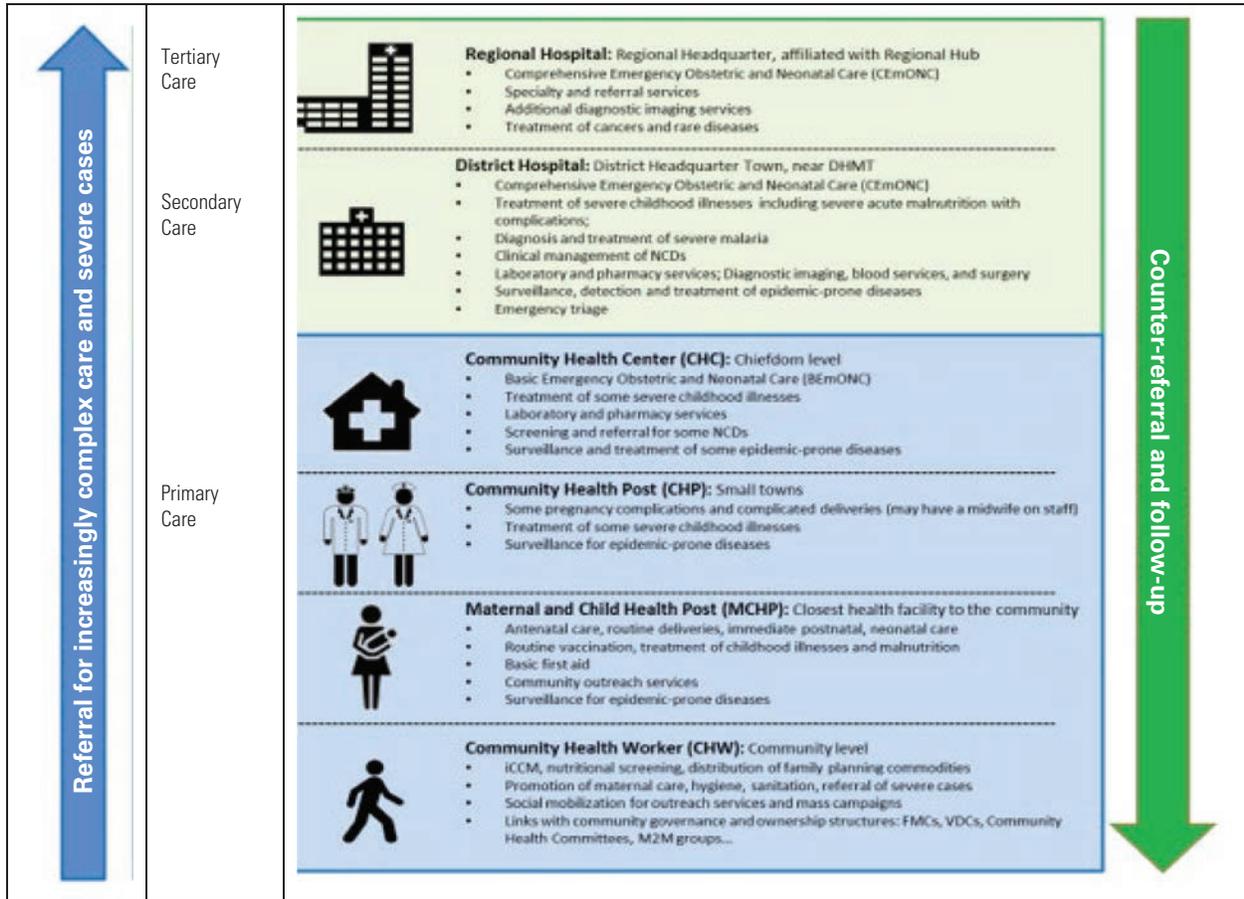
and staff capacity building. The District Health Management Teams (DHMTs) manage, monitor, and oversee the health care service delivery and provision of disease prevention, health promotion, health education, and safe water and environmental sanitation, at the district level across the country. Most of the health facilities in Sierra Leone are public. Overall, there are a total of 1,284 registered health facilities, of which 1,203 (94 percent) are public and 81 (6 percent) are private sector facilities.

Sierra Leone’s public health service delivery system is organized based on three tiers of service delivery. The three tiers are primary health care, secondary health care, and tertiary health care. Primary health care is mainly delivered at four levels of care, including by Community Health Workers (CHWs) who provide care at the community level, and at the Peripheral Health Units (PHUs). The PHUs are categorized in a hierarchy based on the clinical skills of the personnel and the infrastructural availability. These categories include Maternal and Child Health Posts (MCHP), Community Health Posts (CHP), and Community Health Centers (CHC). Secondary

health care is delivered in the district hospitals. These hospitals handle referrals from PHUs and accept walk-in patients who live in the surrounding communities. Tertiary health care is delivered by more advanced and specialized regional hospitals as well as hospitals located in the capital, Freetown. They are mainly the teaching hospitals (see Figure 1).

The private health sector in Sierra Leone consists of the formal and informal sectors, as well as civil society, professional and industry associations. The formal private health sector includes private for-profit entities, which play a role in some service delivery and supply chain, and private not-for-profit entities. The latter include non-governmental and faith-based organizations, which have contributed more substantially to health provision in this context than the for-profit entities. There is a large informal private sector in Sierra Leone, including informal medicine sellers, traditional healers, and other providers. Civil society and associations also support communities and the provision of care indirectly. However, there is a considerable knowledge and data gap on the private sector in Sierra Leone and a need to regulate the sector.

FIGURE 1 Sierra Leone's Health Care Delivery System



Source: Authors' adapted from the Sierra Leone 2015–2020 Basic Package of Essential Services

HEALTH STATUS¹

3

This section assesses the overall health status in Sierra Leone to provide a context for performance of the health care delivery system. It consists of three sub-sections: (3.1) Demographics, (3.2) Health Outcomes and International Benchmarking, and (3.3) Burden of Disease. Each sub-section aims to highlight both progress made and challenges that remain regarding the specific area of the country's health status. To analyze key trends in relation to broader regional patterns, comparator countries were selected, and their indicators were presented for benchmarking purposes. These countries share all the following characteristics with Sierra Leone. They are: (i) low income countries (LICs); (ii) sub-Saharan African (SSA) countries; (iii) countries in the West African subregion; and (iv) countries with a Human Capital Index (HCI)² between 0.32 and 0.37 (Table 2).

The HCI for Sierra Leone is 0.36,³ meaning that if key health and education outcomes and trends remain unchanged, the cohort of children born in Sierra Leone today would achieve only 36 percent of their potential productivity upon reaching adulthood. The labor force has grown at around 2.6 percent per year since 2015. With thousands of young Sierra Leoneans expected to enter the labor market every year, policy actions that will contribute to human capital gains for the rising workforce is required in the short to medium term. Although Sierra Leone's HCI is relatively weak on a global scale, and below the Sub-Saharan Africa regional average of 0.40, it is above the HCIs of Nigeria, Mauritania, and Côte d'Ivoire, three lower middle-income countries.

3.1. Demographics

Rapid population growth in Sierra Leone has been driven by high fertility and low contraceptive prevalence (21 percent), increasing pressure on an already strained health system. The annual population growth rate is estimated at 2.1 percent, due in large part to the high fertility rate (total fertility rate of 4.2 births per woman in 2019), including among adolescents. The total population doubled since 1985, from 3.81 million people in 1985

¹ The source of the data for this section is the World Development Indicators database, 2020, unless otherwise noted.

² The World Bank Human Capital Project makes the case for investing in the education, health, and protection of people through country engagement and analytical work.

³ Sierra Leone's HCI was 0.35 in 2017. It has improved in 3 of the 5 indicators that make up this 2020 HCI estimate including the following: "probability of survival to age 5," "expected years of school," and "survival rate from age 15–60."

TABLE 2 Potential Comparator Countries by Region, Income Group, and Human Capital Index

Country Name	Region	Income Group	Human Capital Index
Liberia*	Sub-Saharan Africa	Low income	0.32
Nigeria	Sub-Saharan Africa	Lower middle income	0.34
Mauritania	Sub-Saharan Africa	Lower middle income	0.35
Côte d'Ivoire	Sub-Saharan Africa	Lower middle income	0.35
Sierra Leone*	Sub-Saharan Africa	Low income	0.36
Mozambique	Sub-Saharan Africa	Low income	0.36
Angola	Sub-Saharan Africa	Lower middle income	0.36
Burkina Faso*	Sub-Saharan Africa	Low income	0.37
Congo, Dem. Rep.	Sub-Saharan Africa	Low income	0.37
Yemen, Rep.	Middle East & N. Africa	Lower middle income	0.37
Lesotho	Sub-Saharan Africa	Lower middle income	0.37
Guinea*	Sub-Saharan Africa	Low income	0.37
Madagascar	Sub-Saharan Africa	Low income	0.37
Rwanda	Sub-Saharan Africa	Low income	0.37

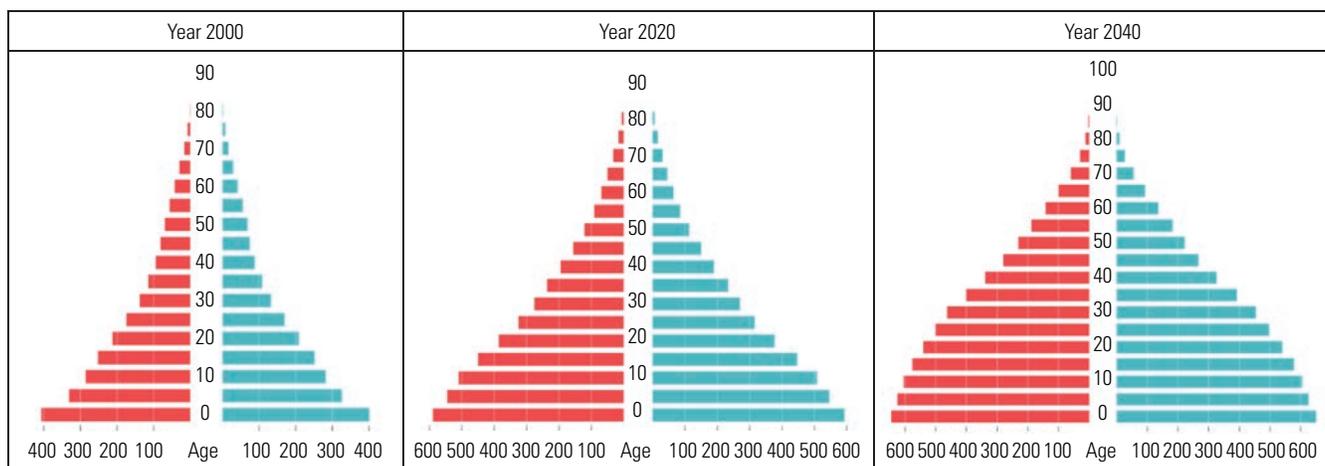
Source: World Development Indicators, 2020

Note*: Asterisk/darker rows indicate countries that meet all comparator country characteristics and were selected for the PER benchmarking analysis.

to 7.65 million in 2018. The growth in population by gender can be seen in the population pyramids for 2000, 2020, and a projection for the year 2040 (Figure 2). Most of the population resides in rural areas, although proportionally it has decreased from 66.7 percent in 1990 to 63.1 percent in 2005, and to 57.9 percent in 2018. Over one-third of the population (35.3 percent) resides in the capital city, Freetown. The urban population growth rate is estimated at 3.14 percent, which has implications for health service delivery as the country continues to urbanize over the coming years. Public health infrastructure will face extra strain if it does not keep up with population growth.

Although it is classified as a pre-demographic dividend country, Sierra Leone's demographic transition has begun and both mortality and fertility indicators have seen declines in recent years. The population between the ages of 0 and 19 years makes up over half of the total population. The high adolescent fertility contributes to increased population growth by lengthening the reproductive period. Despite these challenges, there has been much progress overall and the demographic transition has started. Initially, the declines in mortality drove the process, followed by declines in fertility. Sierra Leone has experienced decreases in its crude death rate (from 25.4 to 11.7 per 1,000 people between 1990 to 2018), the under-five mortality rate (U5MR) (from 263 in 1990 to

FIGURE 2 Sierra Leone's Population Pyramids: 2000 (Left), 2020 (Middle), and 2040 (Right)



Source: UNFPA (<https://www.unfpa.org/data/SL>), Accessed April 13, 2021.

Note: Number of Women (Red Bars on Left) and Men (Blue Bars on Right) in a Given Age Group; Population in Thousands

105 in 2018),^{4,5} the total fertility rate (TFR) (from 6.7 in 1990 to 4.2 in 2019),⁶ and the adolescent birth rate (from 184 in 1990 to 102 in 2019).⁷ The age dependency ratio decreased from 90.6 to 78.7 between 1990 and 2018, which is projected to continue to decline, and in conjunction with other factors could lead to the demographic dividend.

3.2. Health Outcomes and International Benchmarking

While Sierra Leone's health sector has made progress in improving several of its health indicators, comparisons with peer countries show equal or slightly worse trends.

From 1990 to 2017, the life expectancy at birth increased from 39 years to 54 years, which is the fourth lowest value globally. It is lower than the comparator countries (Burkina Faso: 61 years; Guinea: 61 years, Liberia 63 years) and lower than LICs (63 years) and SSA average (61 years) (Figure 3). The Sierra Leone Demographic and Health Survey (DHS) 2019 estimates the maternal mortality ratio (MMR) at 717 per 100,000 live births down from 1,165 per 100,000 live births in the 2013. The value is less than half of its 2000 MMR, a significant decline.⁸ The MMR tends to decrease with an increase in the proportion of births attended by skilled health personnel, which increased in Sierra Leone from 37 percent in 2000, to 60 percent in 2013, and to 87 percent in 2019.⁹

Having improved its food security levels over the last few years, Sierra Leone has performed consistently well compared with its peers in terms of child nutrition. Overall, food insecurity in Sierra Leone has reduced from 49.8 percent

in 2015 to 43.7 percent in 2018. Current estimates suggest that 2.4 percent of the population faces severe food insecurity, a significant reduction from 8.6 percent in 2015.¹⁰ The prevalence of stunting among children under the age of five years decreased from 45.0 percent in 2005 to 29.5 percent in 2019—compared to the most recent estimates for Burkina Faso (24.9 percent); Guinea (30.3 percent); Liberia (30.1 percent); LICs (34.1 percent); and SSA (33 percent). The prevalence of wasting among children under the age of five years decreased from 10 percent in 2008 to 5 percent in 2019 (Table 3), which is lower than most of the comparators—Burkina Faso (8.4 percent); Guinea (9.2 percent); Liberia (4.3 percent); LICs (6.6 percent) and SSA (6.8). The prevalence of severe malnutrition is disproportionately higher in rural communities than in urban centers.¹¹

Although the Ebola outbreak had a negative impact on immunization coverage in Sierra Leone, significant progress has been made in the post-Ebola period. Sierra Leone has a strong performance in child immunization compared to its comparator countries. For example, the percentage of children ages 12–23 months who were immunized for diphtheria-pertussis-tetanus (DPT) in 2018 in Sierra Leone and its comparator countries are as follows: Sierra Leone (90 percent); Burkina Faso (91 percent); Guinea (45 percent); Liberia (84 percent); LICs (78 percent); and SSA (76 percent).

The estimated HIV incidence has decreased slightly in the adult population over the last decades. Antiretroviral therapy coverage is comparable to peer countries, but HIV prevalence is double among females relative to males overall and nearly quadruple among 20–24 year olds.¹² The HIV prevalence among 15–49 year olds increased from 0.6 percent in 1990 to 1.5 percent in 2013 and was 1.7 percent in 2019 (1.1 percent for men and 2.2 percent for women). Among those ages 20–24 years, the HIV prevalence was 0.7 for men and 2.7 percent—nearly quadruple—for women. The prevalence in 2019 was 2.3 percent in urban areas and 1.2 percent in rural areas among 15–49 year-olds. Among those whose age at first sexual intercourse was less than 16 years, 1.1 percent of males (equal to the national average) and 2.7 percent of

⁴ Levels and Trends in Child Mortality, Report 2019. Estimates developed by the UN Inter-agency Group for Child Mortality Estimation, 2019.

⁵ The Sierra Leone Demographic and Health Survey 2019 estimates the U5MR at 122 per 1,000 live births, down from 156 in 2013 and 140 in 2008 per 1,000 live births in the 2013 and 2008 Demographic and Health Surveys, respectively.

⁶ Demographic and Health Survey, 2019.

⁷ Demographic and Health Survey, 2019.

⁸ The global MMR estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division, 2019 include the following values: Sierra Leone: 2,480 in 2000, to 1,760 in 2005, 1,360 in 2010, 1,180 in 2015, and to 1,120 in 2017; 2017 values for Burkina Faso: 320; Guinea: 576; Liberia: 661; the regional values: LICs: 462; SSA: 533 (Trends in Maternal Mortality, 2000 to 2017).

⁹ Demographic and Health Survey for Sierra Leone, 2019.

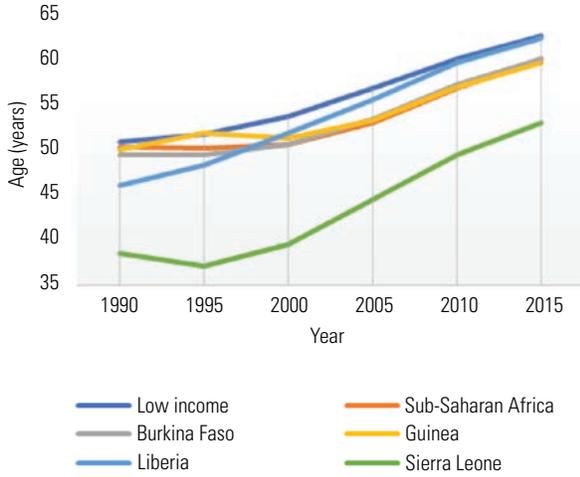
¹⁰ World Food Program, 2018.

¹¹ Demographic and Health Survey for Sierra Leone, 2019.

¹² The 2019 Sierra Leone HIV data in this section are from the Demographic and Health Survey for Sierra Leone, 2019.

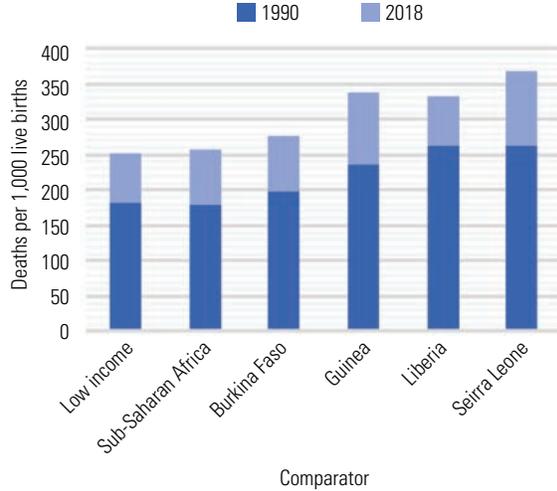
FIGURE 3 Sierra Leone and Comparators: Selected Health Outcomes

Figure 3a: Life expectancy at birth, total (years)



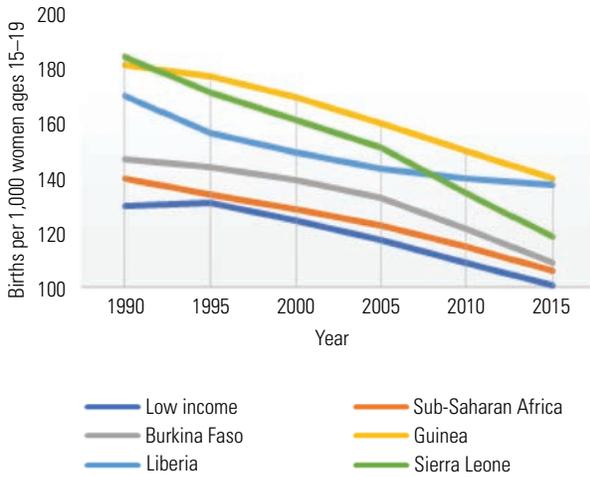
Source: WDI 2020

Figure 3b: Under five mortality rates



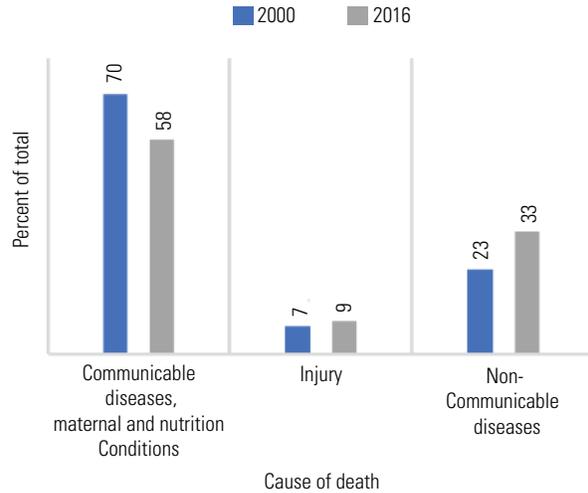
Source: WDI 2020

Figure 3c: Adolescent fertility rate (births per 1,000 women ages 15–19)



Source: WDI 2020

Figure 3d: Cause of death (percent of total)^a



Source: WDI 2020

^aThe three causes of death are: (1) communicable diseases, maternal, prenatal and nutrition conditions; (2) injury; and (3) non-communicable diseases.

TABLE 3 Sierra Leone at a Glance: Selected Health Indicators from the 2008, 2013, and 2019 Demographic and Health Surveys

Indicator	2008	2013	2019
Total fertility rate (births per woman)	5.1	4.9	4.2
Proportion of births attended by skilled health personnel	42	54	87
Adolescent birth rate (15–19 years) per 1,000 women in that age group	142	125	102
Contraceptive prevalence rate, modern methods (percentage of women currently married or in a union, age 15–49 years)	14	16	21
Stunting (height for age below -2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age (percentage)	36	38	30
Malnutrition (wasting) (weight for height below -2 standard deviation from the median of the WHO Child Growth Standards) among children under the age of 5 years, by type (percentage)	10	9	5
Exclusive breastfeeding under 6 months of age (percentage)	10	30	54
Immunization, fully immunized with basic antigens (percentage of children age 12–23 months)	40	68	56

Source: Sierra Leone DHS 2008, 2013 and 2019

females (23 percent higher than the national average) were HIV positive. The number of children ages 0–14 years living with HIV decreased from 7,800 in 2010 to 6,600 in 2018, although there were 680 new cases of HIV in children of this age in 2018. The incidence of HIV per 1,000 uninfected population ages 15–49 years has likewise decreased from 1.6 in 2000 to 1.3 in 2010 and down to 0.9 in 2018. Both the incidence and prevalence of HIV is higher in Sierra Leone than in Burkina Faso (0.2, 0.7), Guinea (0.8, 1.4), and Liberia (0.6, 1.3). Yet it is lower compared to LICs and regional averages (1.2, 2.1 in LICs and 1.8, 3.9 in SSA). Sierra Leone is performing on par with its peers in antiretroviral therapy coverage for people living with HIV (Sierra Leone: 41 percent; Burkina Faso: 62 percent; Guinea: 40 percent; and Liberia: 35 percent).

3.3. Burden of Disease

Sierra Leone has seen a decrease in infectious diseases leading to the start of its epidemiological transition, but it currently faces a double burden of both infectious and

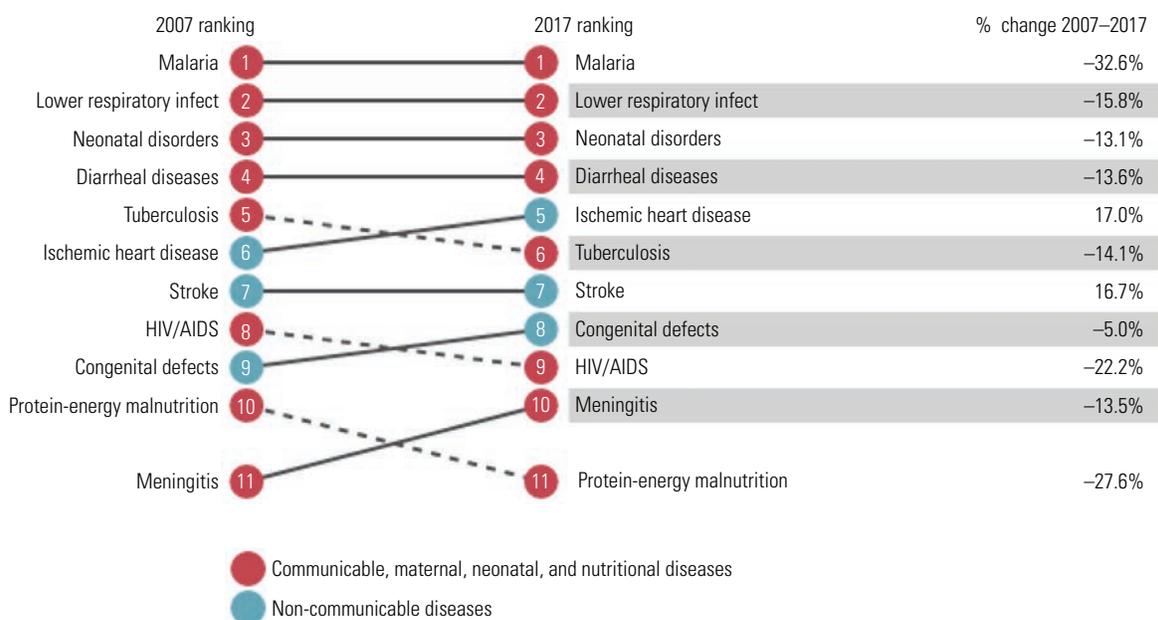
non-communicable diseases. Its overall disease burden has reduced, yet the primary causes of mortality for all ages have remained relatively consistent over the last decade (Figure 4). Malaria remains the leading cause of death and in 2019, was responsible for 22.5 percent of deaths among children under the age of 5 years.¹³ Infectious diseases—especially during pregnancy and childhood—and neonatal disorders remain the leading causes of premature deaths in Sierra Leone. However, there has been significant progress made in decreasing the burden of those conditions. Between 2007 and 2017, the burden of disease attributed to malaria was reduced by 32.6 percent, lower respiratory infections by 15.8 percent, neonatal disorders by 13.1 percent, diarrheal diseases by 13.6 percent, tuberculosis by 14.1 percent, congenital defects by 5.0 percent, HIV/AIDS by 22.2 percent, meningitis by 13.5 percent, and protein-energy malnutrition by 27.6 percent (Figure 4). Over the last decade, however, Sierra Leone has experienced an increase in the burden of non-communicable diseases (NCDs). Ischemic heart disease increased by 17 percent, while stroke increased by 16 percent within the same time frame. It was estimated that in 2016 NCDs accounted for 33 percent of deaths in Sierra Leone, up from 26 percent and 18 percent in 2012 and 2008 respectively.¹⁴ The rising trend of NCDs will increase the costs of providing health care by the government as well as the financial burden on households.

The primary risk factors that contribute to DALYs (disability-adjusted life years) in Sierra Leone remained largely consistent between 2007 and 2017 (Figure 5). Malnutrition, water, sanitation, and hygiene (WaSH), air pollution, and high blood pressure have continued to be primary risk factors. Although only high blood pressure contributed to an increase in DALYs between 2007 and 2017, malnutrition decreased by 21.2 percent, WaSH by 20.7 percent, and pollution by 20 percent. Dietary risks, alcohol use, unsafe sex, tobacco use, high fasting plasma glucose, high body-mass index, and impaired kidney function are other contributing factors to death and disability in Sierra Leone.

¹³ Source: UNICEF, 2018.

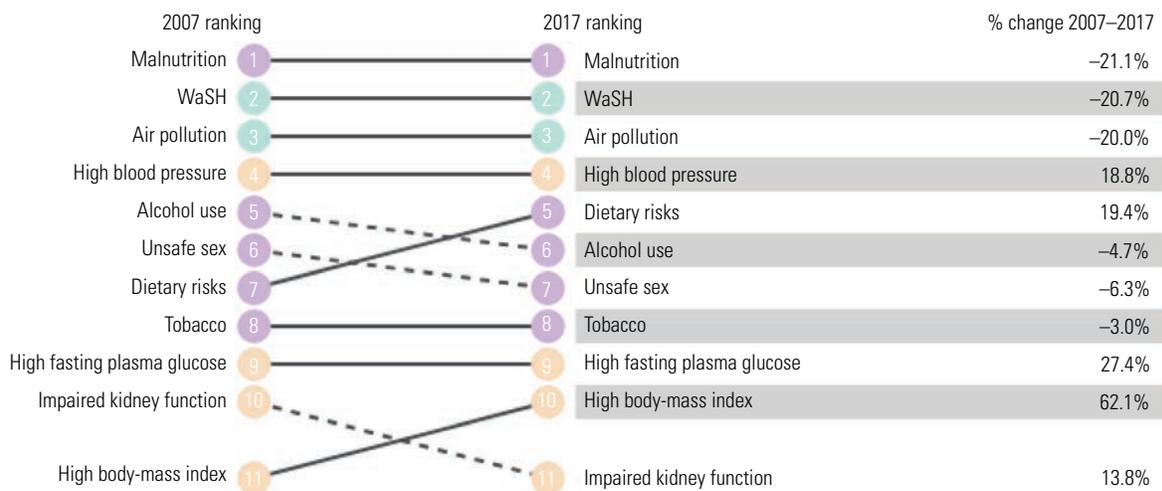
¹⁴ WHO- Noncommunicable Diseases (NCD) Country Profiles, 2018; Witter, S., Zou, G., Diaconu, K. *et al.* Opportunities and challenges for delivering non-communicable disease management and services in fragile and post-conflict settings: perceptions of policy-makers and health providers in Sierra Leone. *Confl Health* 14, 3 (2020). <https://doi.org/10.1186/s13031-019-0248-3>

FIGURE 4 Primary Causes of Mortality in Sierra Leone (All Ages), 2007–2017



Source: IHME, accessed May 3, 2020, available at <http://www.healthdata.org/sierra-leone>

FIGURE 5 Primary Risk Factors Contributing to DALYs in Sierra Leone (All Ages), 2007–2017



Source: IHME, accessed May 3, 2020, available at <http://www.healthdata.org/sierra-leone>

HEALTH SYSTEMS PERFORMANCE

4

This section provides an overview of the state of health systems in Sierra Leone. It outlines the extent to which infrastructure and equipment, human resources, pharmaceuticals and supplies, the health management information system and governance support healthcare delivery across the country. Since the health systems performance affects utilization, this section also discusses service utilization.

4.1. Infrastructure and Equipment

Sierra Leone has a network of 1,284 public and private health facilities, including 54 hospitals, organized into three levels of care. With an average of 1.8 health facilities per 10,000 population, Sierra Leone has a better facility density than most of its immediate neighbors. However, the distribution of health facilities is skewed toward urban areas. Facility density alone does not translate into good health outcomes if complementary inputs are missing. Most of these facilities lack basic infrastructure and equipment. For instance, the average inpatient and maternity bed density per 10,000 population in Sierra Leone is 12 and eight respectively, both of which are below the WHO recommended threshold (SARA Plus 2017). Table 4 indicates that only two percent of facilities have all tracer items and that the mean availability of such items is 57 percent. Likewise, as Table 5 shows, only 25 percent of facilities have the basic equipment for clinical consultations.

4.2. Health Workforce

In 2016, Sierra Leone's skilled health workers totalled 4,826, including 323 physicians, 389 Community Health Officers, 3,185 nurses, 402 midwives, 41 pharmacists, 30 nutritionists and 456 laboratory technicians. Thirty-five percent of the available physicians were not formally employed. They offered their services either on a part-time basis, paid by the facility management or a nongovernmental agency, or on a volunteer basis (SARA Plus, 2017). Sierra Leone is doing relatively well compared to other LICs regarding nurse/midwife workforce, but it has a very low proportion of physicians to population ratio (Figure 6).

Availability of skilled and core health workers, a key component of the essential package of health services, remains a major bottleneck to improving quality of care. An imbalance of health workers, in terms of absolute scarcity and maldistribution across districts,

TABLE 4 Proportion of Facilities with Basic Amenities

Items	Percentage
Emergency Transport	91
Sanitation Facilities	84
Consultation Room	71
Communication Equipment	70
Improved Water Source	57
Power Source	23
Computer with Internet	4
All Items	2
Mean Availability of Tracer Items	57

Source: SARA Plus 2017

including rural and urban distribution, significantly impacts access to and quality of health service delivery. On average, countries require a minimum of 23 core health workers per 10,000 population to achieve adequate coverage rates for the essential primary health care interventions. In Sierra Leone, the skilled health worker density is only 6.40 per 10,000 population. Moreover, the distribution of health workers is skewed towards the urban districts, which have a higher density of health workers compared to rural districts (Figure 7), and physician density is estimated at 0.05 per 1,000 population across the country.¹⁵ In addition to increasing the volume of health workers to address the shortage of providers, improvements in management, supervision and training are critical to ensure quality health service delivery by a skilled Human Resource for Health (HRH) base. Overall provider knowledge and abilities are very low to deliver quality services. Training needs to be better focused with the main objective of strengthening the capacity of health workers to accurately diagnose and treat the main causes of illness as well as to have the skills to refer complicated cases up to higher levels of care. There should also be a concerted emphasis on adhering to the national guidelines as far as managing critical health conditions is concerned.¹⁶

¹⁵ Sierra Leone has a workforce of 4,826 skilled health workers: 323 physicians, 389 Community Health Officers, 3,185 nurses, 402 midwives, 41 pharmacists, 30 nutritionists and 456 laboratory technicians. (SARA,2017).

¹⁶ SDI, 2018.

TABLE 5 Proportion of Facilities with Basic Equipment for Clinical Consultations

Items	Percentage
Blood Pressure Apparatus	81
Stethoscope	92
Thermometer	87
Adult Scale	62
Child Scale	83
Light Source	58
All Items	25
Mean Availability of Tracer Items	77

Source: SARA Plus 2017

4.3. Pharmaceutical Supply Chain

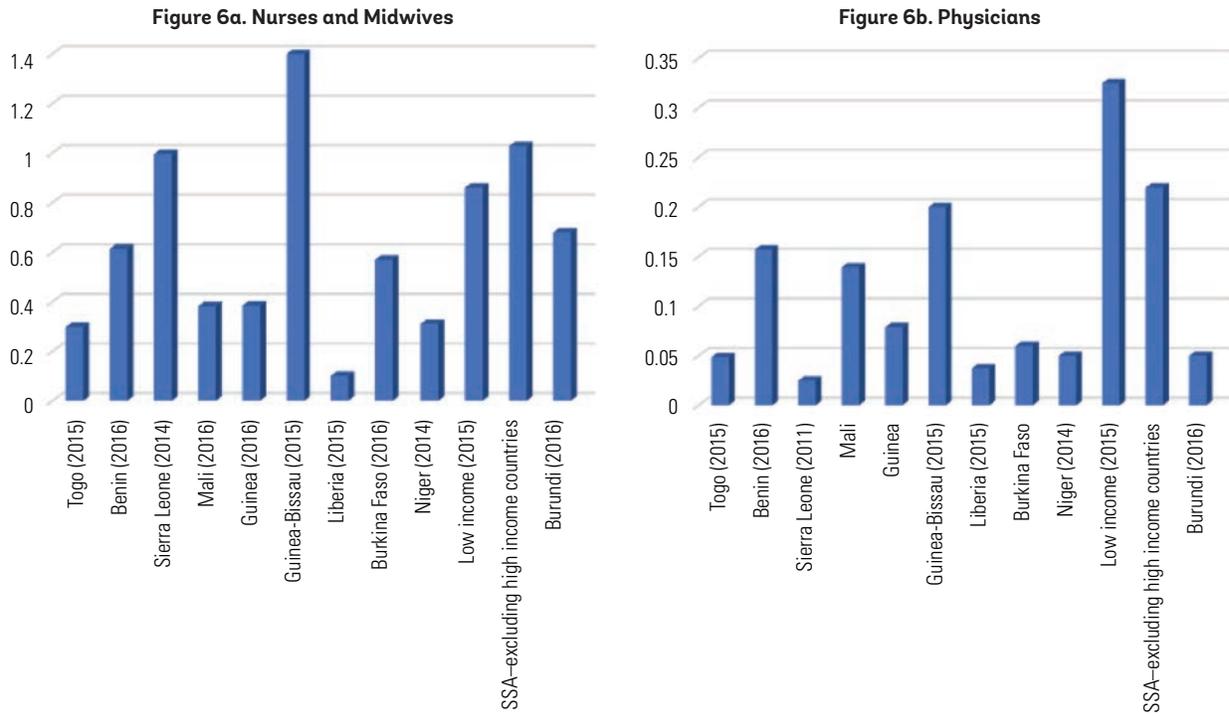
The availability of essential medicines is important for the delivery of the essential package of health services. The essential medicines domain consists of 24 tracer items covering the package of essential services and program. On average, 56 percent of priority drugs were available in Sierra Leonean facilities. Priority drugs for mothers and children were available with average scores of 72.5 percent and 62.6 percent respectively. Although 64.3 percent of the tracer drugs were available in Sierra Leone, only 32.2 percent of facilities had all tracer drugs available (SL SDI, 2018).

The availability of vaccine-related equipment and supplies is much higher in Sierra Leone's facilities. Data from UNICEF and WHO in 2017 indicate that immunization coverage is around 92 percent for BCG, 84 for DTP3-HepB-Hib and 73.5 for the measles vaccine. Nearly all health facilities (96.4 percent) reported they provide vaccination services. Overall, 96.3 percent of all vaccines were available in Sierra Leonean facilities that store vaccines, with little or no difference between urban, rural, public, or private facilities or between hospitals and health centers. (SL SDI, 2018).

4.4. Health Management Information System

Although some progress has been made in the implementation of the Health Management Information System (HMIS), constraints remain in terms of making it a

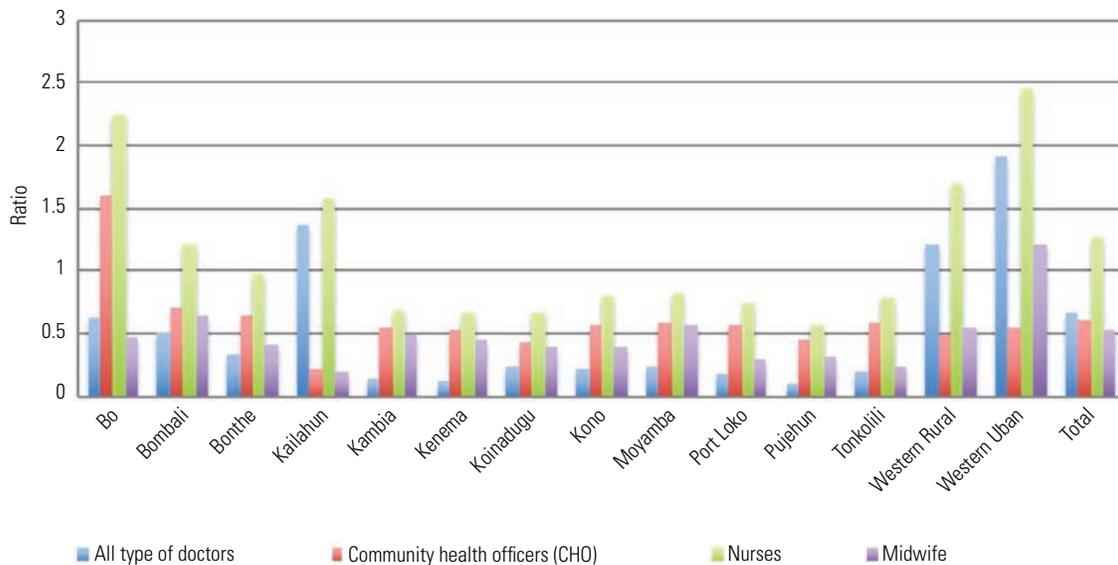
FIGURE 6 Key Health Workers per 10,000 Population in Sierra Leone and Comparator Countries



Source: World Bank WDI 2020

Source: World Bank WDI 2020

FIGURE 7 Core health Workforce Density (per 10,000 Population) by Type of Health Worker by District, Sierra Leone 2017



Source: Sierra Leone SARA Plus Report, 2017

well-functioning system. Currently, most health facilities face constraints in their efforts to make HMIS more effective. The constraints include lack of requisite human resources, lack of information and communication technology (ICT) equipment, unreliable connectivity, and poor power supply. Public facilities rely primarily on paper-based data collection systems, while private sector data are not regularly collected by MoHS. There is little government investment in the HMIS, which leads to inadequate capacity for data management at the central, DHMT and health facility levels. Data use and feedback from the central MoHS to DHMTs and from DHMTs to PHUs remain poor. Additionally, vital statistics are not complete, with 70 percent of birth registration and about 20 percent of death registration captured according to international classification (NHSSP 2016–2020).

4.5. Utilization of Health Services

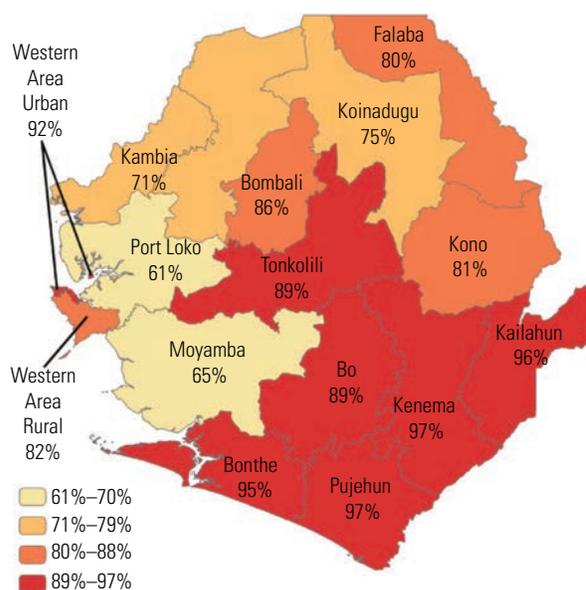
Majority of Sierra Leoneans who reported sickness or injury visited a health care facility or health service provider, but the consultation varies by geographical location, by sex and by age. According to data from the Sierra Leone Integrated Household Survey (SLIHS, 2018), nearly 6 out of every 10 Sierra Leoneans who reported an illness or injury visited a health facility or a medical practitioner (58.5 and 57.7 percent for males and females respectively). Rural and urban residents were equally likely (60 percent each) to visit a health facility or a medical practitioner when they fall ill or are injured. Compared across regions, half of those in the Northern region who fell ill or were injured visited a health facility or a medical practitioner. Over two-thirds of people in the Eastern region reported to a health facility (69.5 and 70.6 percent of males and females respectively), whilst just nearly 6 out of every 10 in the other regions visited a health facility or a medical practitioner. By age, more children (0–4 years, 73.1% males and 75.1% females) visited a health facility or medical practitioner for an illness or injury than any other age group. For the childbearing ages of 15–49 years for females, more females between 30 and 34 years visited a health facility or medical practitioner than their colleagues in the other age groups. The percentage of females visiting a health facility decreases as the age increases from 40 to 49 years and further decreases from 50 to 75 years. An assessment of satisfaction

with health services received was not feasible due to data unavailability.

The percentage of babies delivered in health care facilities is high; but there are differences by residence, age, and educational level of the mother. According to DHS (2020), the percentage of deliveries taking place in health care facilities increased from 54 percent in 2013 to 83 percent in 2019. Per the DHS data, the percentage of deliveries in health care facilities varies by residence (89 for urban and 81 for rural areas), by districts (61 percent for Port Loko and 97 for Kenema and Pujehun as shown in Figure 8), by mother's age, those who gave birth before the age of 20 years, 86 percent delivered at a health facility, versus 84 percent for mothers who were 20–34 years of age, and by mother's educational level (80 for pre-primary or none, and 95 for secondary or more). Moreover, delivery by public or private sector health care facility varied. Eighty-one percent of women delivered in a public facility and two percent in a private facility. Sixteen percent of women delivered at home.

There are significant constraints to usage of health services for women in Sierra Leone. The large majority (72 percent) of women report at least one problem in personally accessing health care, including 85 percent in rural areas and 56 percent

FIGURE 8 Health Facility Births by District (%)



Source: DHS, 2020

in urban areas. By place of residence, 84 percent of those in the North West province reported having problems accessing care, versus 43 percent in the Western Area; by district, 93 percent of women in Falaba versus 35 percent of women in the Western Area Urban were the highest and lowest district values reporting the same. The proportion reporting

these problems decreased with increasing education and household wealth. The most common problem reported was not getting money for treatment (67 percent of all women), followed by distance to the health facility (44 percent), getting permission to go for treatment (24 percent), and not wanting to go alone (22 percent).

SOURCES OF FINANCING HEALTHCARE

The health sector is financed from three main sources: (i) government general revenues; (ii) donor financing and (iii) out-of-pocket payments made by patients who seek care. In 2018, the government's share of all the three sources combined was about 10 percent (9.71 percent), which was small compared with the other two sources. Development partners (DPs) support represented over a quarter (25.88 percent). Household out-of-pocket (OOP) payments made up nearly 45 percent (44.78 percent).¹⁷ Seventy percent of such household expenditures go into drugs, where there are structural inefficiencies due to irrational prescription and sale of counterfeit drugs. About 10 percent of the population faces the risk of catastrophic spending on health (DPPI, 2020). Patients pay for virtually all the services delivered to them at public health facilities and the fees they pay vary from one facility to another even within the same district.

Although domestic general government health expenditure as a percentage of general government expenditure remained relatively constant, as a percentage of current health expenditure it has increased by 6 percent in the period spanning 2015–2018 for which data was available. The general government health expenditure as a percentage of general government expenditure fell by nearly three percent (-2.9 percent) from 2015–2018 (Table 6). The government spent 6.49 percent of its 2019 budget to health, which is still lower than the 15 percent Abuja target. The current per capita government expenditure on health (US\$ 8.33 in 2018) is less than the minimum WHO Commission for Macroeconomics and Health recommendation of US\$34 per person per year. Table 6 provides Sierra Leone's key health expenditure indicators.

¹⁷ This does not add up to 100 percent because it excludes prepaid private spending, employers' contributions, and others for which there was no data.

TABLE 6 Sierra Leona's Health Expenditure Indicators, 2015–2018

Health Expenditure Indicators	2015	2016	2017	2018	Growth Rate 2015–2018
Domestic general government health expenditure (% of current health expenditure)	8.04	11.17	11.15	9.71	6.29%
Domestic general government health expenditure (% of GDP)	1.64	1.85	1.85	1.56	–1.67%
Domestic general government health expenditure (% of general government expenditure)	7.91	7.91	7.91	7.25	–2.90%
Domestic general government health expenditure per capita (current US\$)	9.72	9.73	9.21	8.33	–5.14%
Domestic general government health expenditure per capita, PPP (current international \$)	23.42	28.84	28.47	25.00	2.18%
Domestic private health expenditure (% of current health expenditure)	41.79	57.27	54.84	64.41	14.42%
Domestic private health expenditure per capita (current US\$)	50.53	49.88	45.27	55.25	2.98%
Domestic private health expenditure per capita, PPP (current international \$)	121.77	147.84	140.01	165.74	10.28%
External health expenditure (% of total current health expenditure)	50.18	31.56	34.01	25.88	–22.07%
External health expenditure per capita (current US\$)	60.67	27.49	28.07	22.20	–33.51%
External health expenditure per capita, PPP (current international \$)	146.22	81.46	86.82	66.59	–26.22%
Out-of-pocket expenditure (% of current health expenditure)	36.70	41.55	40.92	44.78	6.63%

Source: WDI

REVIEW OF PUBLIC HEALTH EXPENDITURE

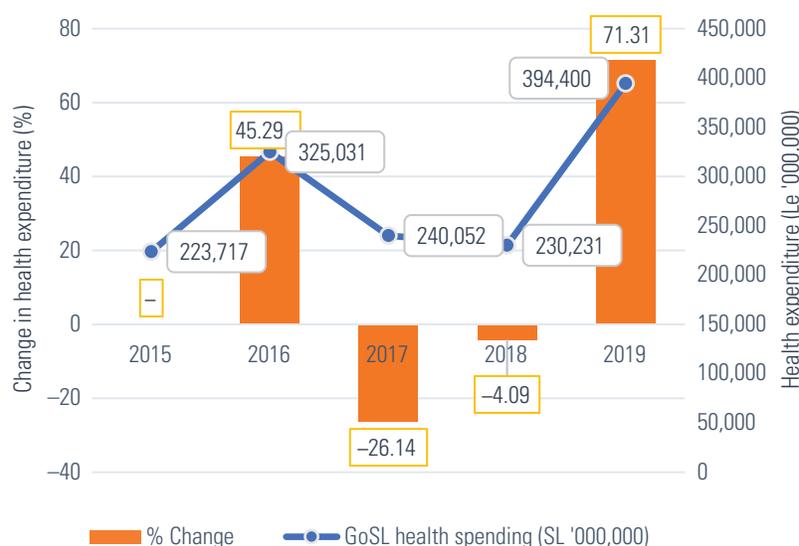
This section examines the levels of health spending by the government. It assesses the economic and functional compositions of health expenditures and health expenditure by program. It also sheds light on the critical role of external public financing in the sector. Budget execution performance is examined as well.

6.1. Levels of Health Expenditure

For the period under review (2015–2019), public health expenditure (both capital and recurrent,¹⁸ including personnel emolument) grows at an average annual rate of 14.17 percent. The annual average growth rate, however, obscures the volatile spending trend for the period. Public health spending demonstrates a fluctuating, peak-and-trough pattern. This spending unpredictability undermines systematic planning and performance. The spending increased in 2016. It dropped in 2017 and 2018, rising considerably in 2019. The highest decrease of 26.16 percent was recorded in 2017, while the maximum increase of 71.31 percent was in 2019 (Figure 9). Further assessment of disaggregated data to tease out the drivers of the changes in expenditure finds that the fall in 2017 was mainly due to cuts in capital transfer and domestic capital expenditures respectively. Capital transfer dropped from Le 89.9 billion in 2016 to Le8.7 billion in 2017 and domestic capital expenditure was zeroed out in 2017 from Le17.3 billion in 2016. On the other hand, the main driver of the rise in the 2019 public health expenditure is increased spending on personnel emoluments. Spending on personnel emoluments rose by about 84 percent from Le167.8 billion in 2018 to Le308.2 billion in 2019. Overall, the spending volatility weakens informed decision-making and planning.

Relative to other social sectors, the Ministry of Health and Sanitation (MoHS) receives the third highest level of funding, after Education, Science and Technology and Works, Housing, and Infrastructure. As shown in Table 7, an analysis of government spending by sector indicates that for the review period a total of Le7.9 trillion was spent on the social sectors. Over 43 percent (Le 3,420.2 billion) was dedicated to Education, Science and

¹⁸ The GoSL's budget classifies as recurrent expenditure spending on personnel emoluments, goods and services, current transfers (comprising grants to other government bodies, other contributions, and subsidies). Capital transfers (domestic capital transfers, defined as transfers to other agencies of general government) and capital expenditures (explained as domestic capital expenditures) make up the capital expenditure category.

FIGURE 9 Trends in Annual GoSL Health Expenditure, 2015–2019

Source: Authors' Estimates Based on Sierra Leone's BOOST Database

Technology, Works, Housing, and Infrastructure followed with close to 32 percent (Le 2,492.2 billion). Health spending was next with 18 percent (Le 1,413.4 billion).

At roughly six percent, public expenditure on health compares well with other key sectors in 2019. Public health expenditure ranked second among the top five spending entities as follows: Ministry of Education, Science and Technology (11 percent), Ministry of Health and Sanitation (6.49 percent), Ministry of Works, Housing and Infrastructure (5.06 percent), Ministry of Technical and Higher Education (4.28 percent) and

Ministry of Foreign Affairs and International Cooperation (4.26 percent) in 2019 (Table 8).

Public health spending in Sierra Leone is higher than its West African sub-regional neighbors, but health outcomes are lower. Sierra Leone spends more public and private resources on health than some of its West African peers. Total health expenditure was equivalent to over 5 (5.72) percent of its GDP in 2018 when comparable data are available. It is higher than the West African sub-regional average (4.85 percent), LIC average (5.34 percent) and Sub-Saharan Africa

TABLE 7 Health and Other Social Sectors Compared, 2015–2019 (Le in Million)

Ministry	2015	2016	2017	2018	2019	Total	Average	Percent of Total
Education Sci & Technology	597,305	691,894	672,994	789,934	668,105	3,420,231	684,046	43.47
Health & Sanitation	223,717	325,031	240,052	230,231	394,400	1,413,430	282,686	17.97
Labour, Employment & Soc Security	6,404	7,306	8,314	6,880	7,754	36,568	7,332	0.47
Soc Welfare, Gender & Children's Affairs	12,148	12,792	12,811	15,977	37,971	91,699	18,340	1.17
Sports	5,999	11,901	7,826	16,765	28,410	70,900	14,180	0.90
Technical & Higher Education					260,015	260,015	260,015	3.30
Tourism & Cultural Affairs	5,485	9,348	4,664	4,364	2,961	26,822	5,364	0.34
Works, Housing & Infrastructure	412,273	739,695	515,634	517,111	307,408	2,492,221	498,424	31.68
Youth Affairs	6,009	15,427	5,868	11,333	16,959	55,596	11,119	0.71
Total	1,269,340	1,813,394	1,468,163	1,592,594	1,723,984	7,867,474	1,575,495	100

Source: Authors' Estimates Based on Sierra Leone's BOOST Database

TABLE 8 GoSL Expenditure by Ministries, Departments and Agencies, 2019

Ministry	Amount (SL Million)	Percent of Total
Ministry of Education Science and Technology	668,105	11.00
Ministry of Health and Sanitation	394,400	6.49
Ministry of Works, Housing and Infrastructure	307,407	5.06
Ministry of Technical and Higher Education	260,015	4.28
Ministry of Foreign Affairs & International Co-operation	258,787	4.26
Ministry of Defence	219,083	3.61
Ministry of Energy	160,898	2.65
Office of the President	160,807	2.65
Ministry of Finance	147,708	2.43
Ministry of Water Resources	74,887	1.23
Ministry of Agriculture, Forestry and Food Security	63,658	1.05
Ministry of Transport and Aviation	60,206	0.99
Ministry of Local Government and Rural Development	47,324	0.78
Ministry of Social Welfare, Gender & Children's Affairs	37,971	0.63
Ministry of Information and Communication	35,659	0.59
Ministry of Mines and Mineral Resources	30,721	0.51
Accountant Generals Department	29,160	0.48
Ministry of Trade and Industry	28,601	0.47
Ministry of Sports	28,410	0.47
Office of the Vice President	24,894	0.41
Ministry of Planning and Economic Development	21,433	0.35
Ministry of Tourism and Cultural Affairs (National Tourist Board)	20,945	0.34
Ministry of Youth Affairs	16,959	0.28
Ministry of Fisheries and Marine Resources	11,876	0.20
Ministry of Lands, Country Planning and the Environment	9,208	0.15
Ministry of Political and Public Affairs	7,972	0.13
Ministry of Labour, Employment & Social Security	7,754	0.13
Ministry of Tourism and Cultural Affairs	2,961	0.05
Ministry of Internal Affairs	1,993	0.03

Source: Authors' Estimates Based on Sierra Leone's BOOST Database

(SSA) regional average (5.08 percent) respectively. Similarly, Sierra Leone dedicates 7.25 percent of its own domestic public resources to general government health expenditure (GGHE), which is higher than the sub-regional average (5.65 percent). GGHE as a percentage of GDP is 1.56 percent for Sierra Leone, which is higher than the West African regional average of 1.37 percent (Table 9). Despite Sierra Leone's high spending, populations in other West African countries, LICs and SSA, as discussed in Section 3.2, live longer and healthier than

Sierra Leoneans. Sierra Leone's relatively poor health outcomes suggest that there is scope for the GoSL to improve the efficiency of spending. Table 9 compares Sierra Leone's key health expenditure metrics with its West African sub-regional peers, the averages of LIC and SSA.

6.2. Economic Composition of Government Health Expenditure

Recurrent expenditure represents 90 percent of public health expenditure. For the five-year period, spending on recurrent and capital combined was Le1.43 trillion. Ninety percent (Le1.28 trillion) of the total was devoted to recurrent expenditure, while 10 percent (Le147.71 billion) was spent on capital investments. The recurrent expenditure comprised personnel emoluments, goods and services and current transfers (grants). Alternatively, capital transfers and domestic capital spending made up the capital expenditure. Figure 10 demonstrates the recurrent and capital expenditure for the period under review. Low capital expenditure has led to inadequate availability of health infrastructure, which has a serious impact on the efficient delivery of health services.

Spending heavily favors personnel emoluments¹⁹ relative to goods and services, and current transfers in the recurrent expenditure category. Expenditure on salaries, wages and other personnel emolument items for the review period is nearly four times (Le 902.87 billion) the expenditure on goods and services (Le227.64 billion). It is over six times the spending on current transfers (Le137.21 billion). Figure 11 shows trends in the key components of recurrent expenditure for the period.

In 2019, spending on personnel emoluments accounted for 78 percent (Le308.2 billion) of public health expenditure. Goods and services and current transfers made up the rest as Figure 12 illustrates. Thirteen percent (Le51.2billion) was devoted to goods and services, with eight percent (Le31.7 billion) going to grants (current transfers). While wage hikes in response to health personnel strikes are said to explain the huge spending on personnel in 2019, higher

¹⁹ Personnel emoluments include basic salaries, wages, grants, allowances, and social security.

TABLE 9 Health Spending Compared with West African Sub-Regional Countries

Country	General Government Health Expenditure (GGHE) as Percentage of General Government Expenditure	General Government Health Expenditure (GGHE) as Percentage of GDP	External Health Expenditure (Percentage of Current Health Expenditure)	Current Health Expenditure as Percentage of GDP	Current Health Expenditure Per Capita, in US\$ Purchasing Power Parity (PPP, Current International)
Sierra Leone	7.25	1.56	25.88	5.72*	257.33
Benin	2.96	0.49	30.11	2.49	83.21
Gambia, The	4.38	0.95	35.08	3.09	80.81
Guinea	4.11	0.65	9.88	3.93	109.24
Guinea-Bissau	3.02	0.64	12.44	7.00	123.18
Liberia	5.23	1.70	25.22	6.74	n/a
Nigeria	4.44	0.58	7.86	3.89	232.99
Senegal	4.26	0.95	13.72	3.98	146.39
LIC average	...	1.11	29.16	5.34	218.95
West African average	5.65	1.37	17.58	4.85	937.44
Sub-Saharan Africa (excluding high income)	...	1.86	12.38	5.08	260.78

Notes:

i. *Authors Recalculated Figure Since 16.06 Percent as Indicated in the WDI was Deemed an outlier Compared with its West African Neighbors

ii. LIC = Low Income Country

iii. The table Lists Global Average for LIC, Estimated West African Sub-Regional Average and Regional Average for all Sub-Saharan Africa Countries. All Data Points are for 2018

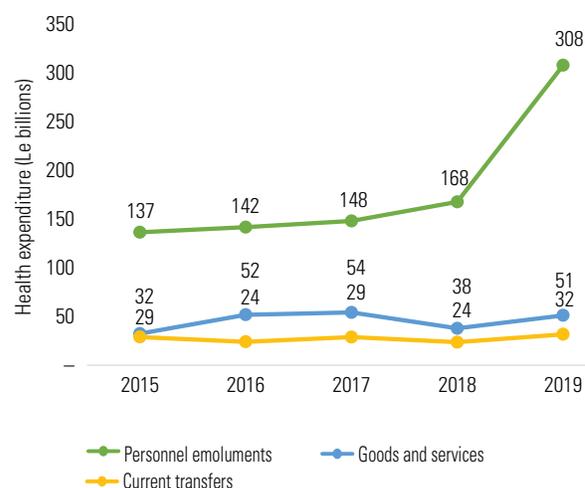
Source: World Development Indicators (WDI)

FIGURE 10 Recurrent and Capital Health Expenditure in Le Billions, 2015–2019

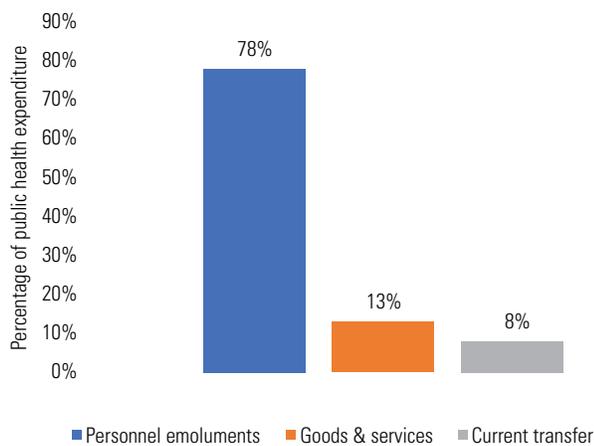


Source: Authors' Illustration from Sierra Leone BOOST database, Expenditure Figures are in Nominal Values

FIGURE 11 Trends in Recurrent Expenditure Components, 2015–2019



Source: Authors' Calculation from Sierra Leone's BOOST Database.
Note: Expenditure Figures are in Nominal Values

FIGURE 12 GoSL Recurrent Expenditure, 2019

Source: Authors' Estimates from the Sierra Leone's BOOST Database

personnel emolument funding crowds out spending for goods and services such as drugs and medical supplies and capital investments.²⁰

For the goods and services consumed during the review period, 80 percent of spending in that category is on goods and 20 percent on services. Goods used included medical supplies, essential medicines, other drugs and medical supplies, furniture, office equipment and others. The expenditure on goods is spent disproportionately (55 percent) on other drugs and medical supplies with just a little over six percent on essential drugs. Further analysis shows that for all but one year (2018), no money was spent on essential drugs during the five-year period. Lack of spending on essential drugs results in stockouts in health facilities, which raises questions about the quality of spending. A 2017 Sierra Leone SARA Plus study reports a low availability of essential drugs at health facilities. The study found a 31 percent mean availability of essential medicine tracer items, which meant on average only six of the 20 items were available at the health facilities.²¹ Low spending on essential drugs has led to low availability of essential medicines in districts across the country. On average, the 14 districts as of 2017 had only seven of the

20 essential medicines needed to deliver quality services. Tonkolili (24 percent), Bombali (37 percent) and Koinadugu (37 percent) had the lowest mean availability respectively.

In terms of investments in capital items, the GoSL spent a total of Le145.71 billion from 2015–2019, 88 percent (Le 128.36 billion) of which was on capital transfers to other agencies of general government. The remaining 12 percent (Le17.35 billion) was classified as capital expenditure. The basis upon which the funds are transferred to other agencies and for what purposes remain unclear. The capital expenditure class, which is further described as domestic capital expenditures was spent on vehicles in 2016. As noted previously, only 25 percent of health facilities had the basic equipment for clinical consultations, according to the 2017 SARA Plus Report. Thus, the report recommended to invest in basic equipment necessary for quality of care. It also recommended investments in amenities to improve sanitation, availability of electricity, internet connectivity, and infection prevention and control.²² Such recommendations notwithstanding, critical investments in equipment, amenities, buildings, machinery, IT (SL 50 million was spent on computers and ancillary equipment in 2015), capital repairs and maintenance (SL 135 million and SL 350 million were spent on building maintenance in 2015 and 2019 respectively), and other infrastructure are not explicitly accounted for in the data examined. It must be noted for example that most of the maternal deaths occur at hospitals largely due to poor quality of care.²³ This situation suggests that enhanced infrastructure and equipment at the health facilities will advance the quality of care pillar of the GoSL's strategic health sector priorities. Better quality of care will significantly drive service utilization, thereby saving lives.

6.3. Functional Composition of Government Health Expenditures

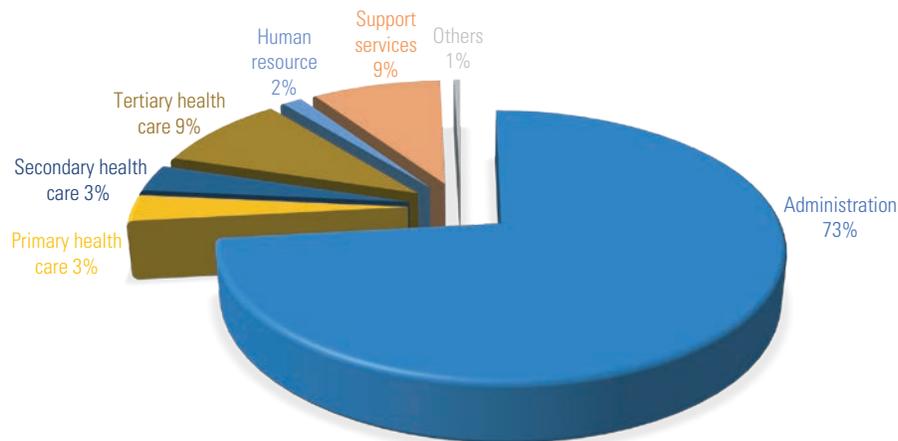
An assessment of the GoSL's health expenditure by functions indicates that from 2015–2019, government health spending benefitted tertiary and secondary care combined, apart from administrative services. An average total of Le282.69 billion was spent on the key functions to address

²⁰ Recurrent expenditure in 2019 represents 99 percent of public health spending, while the remaining one percent is expended on capital investments.

²¹ Summary Report of the 2017 SARA Plus in Sierra Leone: Service Availability and Readiness Assessment (SARA), Quality of Care Survey, and Data Quality Review.

²² *ibid.*

²³ Ministry of Health and Sanitation SL (2017). Sierra Leone National Reproductive, Maternal, New-born Child and Adolescent Health Strategy 2017–2021. Free Town.

FIGURE 13 Functional Composition of GoSL's Health Expenditure, 2015–2019 Average

Source: Authors' Calculations Based on Sierra Leone's BOOST Database

healthcare needs for the period under review. As Figure 13 shows, a share of 73 percent (Le207.09 billion) of the average total financed the administrative services, comprising the office of the Chief Medical Officer (CMO), office of Permanent Secretary(PS), Directorate of Nursing Services, Directorate of Policy, Planning and Information services and others. A combined average of 12 percent (Le35.79 billion) of government spending is directed toward secondary and tertiary care services. Despite the GoSL's policy to focus on providing Universal Health Coverage (UHC), the share of public expenditure devoted to primary health care (PHC) is only three percent (Le9.21 billion). It must be, however, noted that the expenditure on PHC as a stand-alone is inexact. It does not capture expenditure on PHC services delivered at the secondary level. For instance, the secondary health care grant allocation criteria and formula account for a 10 percent coverage of under-five consultation.²⁴ The "Others" class in Figure 13 is made up of funding (Le1.30 billion) for hospitals and laboratory services, mental health and non-communicable diseases, and drugs and medical supplies.

Realizing GoSL's stated strategic priority of preventing disease and promoting health calls for a commitment to results from PHC interventions. A health system anchored in a

²⁴ Allocation criteria for secondary health care grant include lump sum 30 percent, bed occupancy 15 percent, population 25 percent, under-five consultations 10 percent and hospital utilization rate, 20 percent (Source: Local Government Financing Directorate, Ministry of Finance).

robust PHC would be the most cost-effective way to address comprehensive health needs close to Sierra Leoneans' homes and communities.²⁵ Quality, accessible, affordable services at the primary level could prevent or easily treat the leading causes of illness and death (malaria, acute respiratory illness, neonatal disorders and diarrhea, as noted above in Section 3.3) in Sierra Leone. But the team noticed that funding for PHC was not linked to any performance targets. The PHC grant allocation criteria,²⁶ for instance, did not have any performance indicator.

The GoSL's classification of health spending by administrative units (directorates and departments) limits the extent to which spending for programs or subprograms being prioritized to deliver healthcare services could be adequately assessed. Yet, the expenditure data reviewed offer some insights on an array of programmatic spending.²⁷

²⁵ World Health Organization.2019. Primary health care on the road to universal health coverage: 2019 monitoring report: executive summary. Geneva: World Health Organization (WHO/HIS/HGF/19.1). License: CC BY-NC-SA 3.0 IGO.

²⁶ The formula is based on lump sum weighted 45 percent; needs adjusted population weighted 55 percent; and the needs adjusted factors are such that Category A Councils (1.5); Category B Councils (2) and Category C Councils (3) (Source: Local Government Financing Directorate, Ministry of Finance).

²⁷ Some jurisdictions, The Gambia, for example, with program-based budgeting since 2016, categorize spending by programs such as *family health, disease control, social welfare, and strategy, policy, and administration*. They are further disaggregated into sub-programs, which could best describe the programs presented in Table 10.

As shown in Table 10, Maternal and Child Health accounted for an average spending of nearly 60 (57.17) percent in 2018–2019, STI/HIV/AIDS Prevention and Control, 23.64 percent, and National School Health Program, 8.35 percent. The relatively poor health outcomes in maternal and child health in Sierra Leone suggest inefficient use of resources, given the considerable spending devoted to the area. Similarly, the 23.64 percent average spending on the STI/HIV/AIDS Prevention and Control Program between 2018–2019 masks the steep fall of approximately 70 percent (from Le1.6 billion in 2018 to Le517 million in 2019). This is against the backdrop of increasing HIV prevalence among 15–49 year-old Sierra Leoneans. Again, malaria is a leading cause of illness and death in Sierra Leone. Hence, spending Le 80 million (2.16 percent) in 2018 and nothing at all in 2019 on the Malaria Prevention and Control Program diminishes the potential to improve the health status of Sierra Leoneans. As the next section explains, the GoSL depends heavily on donors to fund its health sector programs, which explains the insufficient allocation to the programs.

6.4. Development Partners Support

Development Partners (DPs) complement government efforts in the delivery of health services in Sierra Leone. Their support is largely off-budget in the form of commitments

and disbursements through the implementation of vertical investment projects and technical assistance. Donor expenditures constitute a significant proportion of the total health sector expenditure in the country, with several DPs, including international NGOs implementing various projects and programs at the national, district and health facility levels. Given that a number of international NGOs implement projects of the major DPs in the sector, this review sought to focus primarily on expenditures from the key DPs to avoid double counting of expenditure data received. As shown in Table 11, the major DPs whose expenditures were readily available are the World Bank, Global Fund, Gavi, UNICEF, WHO, JICA, CDC, and IsDB. Total DPs' spending over the period under review, amounted to US\$317.2 million. World Bank is the biggest spender accounting for 39.6 percent, followed by Global Fund (24.9 percent), GAVI (14.9 percent), UNICEF (11.1 percent), WHO (6.1 percent) and JICA (2.8 percent) of the total DPs' expenditure.

Total sector spending excluding out-of-pocket (i.e. DPs and GoSL only), over the review period amounted to US\$357.2million. DPs' spending accounted for the lion's share (88.2 percent) compared to GoSL (11.2 percent) of the total sector expenditure (Table 12).

The above analysis shows heavy overdependence on donors to implement health projects/programs. While this provides government with more resources, it does not guarantee sus-

TABLE 10 Expenditure on Health Programs, 2018–2019

Program	2018		2019		Percent Average
	Amount (in Le '000,000)	Percent of total	Amount (in Le '000,000)	Percent of total	
Environmental Health (Sani) & Entomology	83	2.25	79	0.73	1.49
Health Education	80	2.16	49	0.45	1.31
Infection Prevention & Control	197	5.33	216	2.00	3.67
Malaria Prevention & Control Program	80	2.16	—	0.00	1.08
Maternal & Child Health/EPI	1,040	28.14	9,312	86.19	57.17
Mental Health	126	3.41	6	0.06	1.74
National School Health Program	421	11.39	574	5.31	8.35
Neglected Tropical Diseases	60	1.62	—	0.00	0.81
Reproductive Health/Family Planning	39	1.06	51	0.47	0.77
STI/HIV/AIDS Prevention & Control Program	1,570	42.48	517	4.79	23.64
Total	3,696	100	10,804	100	100

Source: Authors' Calculations from Sierra Leone's BOOST Database. Note: Expenditure Figures are in Nominal Values

TABLE 11 Development Partners' Support to the Health Sector, 2015–2019 (US\$ Million)

Donor	Project	2015	2016	2017	2018	2019	Total	Share of Total Expenditure
World Bank	HSDSSP, EERP, REDISSE	35.3	39.0	20.0	18.5	12.7	125.5	39.6
Global Fund	Malaria, TB, and HIV AIDS	0.0	4.5	23.3	31.3	19.9	79.0	24.9
GAVI	Vaccine Support	10.2	5.9	10.9	8.0	12.2	10.2	14.9
UNICEF	Health, Nutrition, Sanitation and WASH in health facilities	14.9	7.3	3.7	5.6	3.7	35.2	11.1
WHO	WHO—MoHS Program Budget Plan of Action	2.7	6.2	5.1	3.5	1.8	19.2	6.1
JICA	Strengthening Supportive Supervision Systems; Nursing skills on new-born and child health care, Pediatric Nursing Care Training	2.5	1.5	1.4	1.8	1.8	9.0	2.8
IsDB	Health Systems Strengthening Project (HSSP)	0.1	—	0.1	0.4	0.9	1.6	0.5
CDC	Strengthening Public Health Impacts, Systems, Capacity and Security	—	—	—	0.0	0.4	0.5	0.1
Total		65.5	64.5	64.5	68.7	52.6	317.2	100.0

Note: REDISSE-Regional Disease Surveillance Systems Enhancement; EERP-Ebola Emergency Response Project; HSDSSP-Health Services Delivery and Systems Support Project

tainability of sector projects/programs as most of these donors' programs/projects are implemented within a certain period. Donors play a significant role in the sector, but the allocation, efficiency, equity and impact of external financing could hardly be determined due to challenges of attribution and multiple counting.

6.5. Budget Execution Performance

GoSL's health sector priorities are reflected in its budget for the sector. The budget helps to plan, monitor, and manage spending on programs carried out to deliver health services. During budget execution, appropriated funds are spent on implementing activities to deliver services envisioned. An analysis of budget execution performance is critical to gauge how effectively the budget allocation and releases are implemented as intended. This section assesses MoHS's budget execution performance by comparing what was expected to be spent on health with the actual spending. The

objective is to ascertain the budget execution performance by economic class of spending, recurrent (personal emoluments, goods and services, and current transfers) and capital expenditure (capital transfers and capital expenditures).

MoHS's capital and recurrent expenditures show mixed results in terms of execution performance. Over the period 2015–2019, capital expenditure was underspent by about 32 percent (Le 70.4 billion). In contrast, recurrent expenditure was overspent by over four percent (Le51.2 billion). Nonetheless, as shown in Figure 14, capital expenditure outturns exceeded the approved budget for three (2015–2017) out of the five years in the review period. Compared with other countries, this pattern of actual capital expenditure exceeding the budgetary allocations is unusual. Most developing countries often underspend capital expenditure. Nevertheless, deficiencies in budget preparation could be the source of the overruns. When preparing the budget, continuing commitments for investment projects may be poorly taken into account. In contrast, aside from 2019 when the highest outturn of Le391.2 billion was recorded for recurrent expenditure, it fell short of the approved budget each year. The underspending could be attributable to insufficiencies in budget and program preparations leading to an overestimated budget.

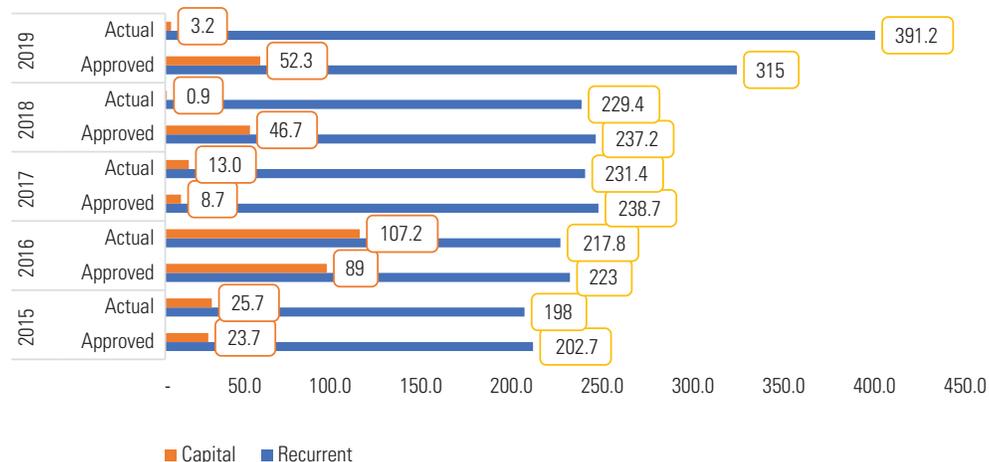
TABLE 12 Total Health Sector Expenditure, 2015–2019

Source	Amount (US\$)	Share of Total
Total Donor	317.2	88.8
Total GoSL	40.0	11.2
Total Sector Expenditure	357.2	100.0

Source: DPs Expenditure Database & BOOST.

Further assessment of the expenditure by economic categories reveals an explicit view of MoHS's budget performance. As illustrated in Table 13, trends in the budget execution performance of the five subsidiary expenditure categories (personnel emolument, goods and services, current transfers,

FIGURE 14 MoHS Budget Execution Performance (Actual vs. Approved Budget), 2015–2019 (Le Billions)



Source: Authors' Calculation from Sierra Leone's BOOST Database.
Note: Expenditure Figures are in Nominal Values.

capital transfers and capital expenditures) show that MoHS underspent an average Le285.4 billion, with an overall average budget execution rate of 98.2 percent of its total budget for the period 2015–2019. The high budget execution rate implies that there is room for improvement in terms of health outcomes. Besides, execution performance notwithstanding, compared to recurrent expenditure, the allocations to capital expenditure are inadequate. The funding imbalance needs to be addressed.

A sound governance system can improve health outcomes. Policies, laws, and regulations are unlikely to be implemented and enforced without a well-functioning governance framework. Governance is an area that can be greatly strengthened in the Sierra Leone health system. MoHS has formulated several policies and strategies, including NHP,

NHSSP, UHC Roadmap, and for the first time a National Health Financing Strategy (NHFS). But health policies are only as good as they are able to improve people's health. Implementation of policies and strategies has been a challenge in the past.

Several governance challenges at the MoHS could be contributing factors for the GoSL's inability to implement these policies and strategies. For instance, lack of coordination and information asymmetry among central MoHS directorates impede effective implementation. Health workers at the PHC level are not conversant with policies and procedures outlined in the National PHC Handbook. The situation is dire at the DHMT level (refer to Box 1). To achieve its health sector goals and priorities, the GoSL must develop concrete action plans to address the governance challenges.

TABLE 13 MoHS Budget Execution Performance, 2015–2019

Expenditure Category	Approved Budget	Actual	Overspending/ Underspending Approved Budget- Actual Amount (Le)	% of Approved Budget	Budget Execution rate (%) Outturn/Total Approved Budget
2015					
Personnel Emolument	133.8	137.6	(3.8)	(2.8)	60.8
Goods & Services	39.1	32.4	6.6	16.9	14.3
Current Transfers	29.9	28.9	1.0	3.2	12.8
Capital Transfers	23.7	25.7	(2.0)	(8.3)	11.4
Capital Expenditure			0.0	—	—
Total (MoHS)	226.5	224.6	1.8	0.8	99.2
2016					
Personnel Emolument	144.6	144.2	0.5	0.3	46.2
Good & Services	53.8	51.9	1.9	3.5	16.6
Current Transfers	24.5	24.0	0.5	2.1	7.7
Capital Transfers	65.8	89.9	(24.1)	(36.7)	28.8
Capital Expenditure	23.3	17.3	6.0	25.6	5.6
Total (MoHS)	312.0	327.3	(15.2)	(4.9)	104.9
2017					
Personnel Emolument	158.4	151.2	7.2	4.5	60.1
Goods & Services	50.5	54.2	(3.8)	(7.5)	21.6
Current Transfers	29.8	28.9	0.9	3.2	11.5
Capital Transfers	13.0	8.7	4.3	33.1	3.4
Capital Expenditure			0.0	—	—
Total (MoHS)	251.7	243.0	8.6	3.4	96.6
2018					
Personnel Emolument	185.8	169.9	15.9	8.6	59.5
Good & Services	28.7	37.9	(9.2)	(32.1)	13.3
Current Transfers	24.3	23.7	0.6	2.4	8.3
Capital Transfers	46.7	0.9	45.8	98.2	0.3
Capital Expenditure			0.0	—	—
Total (MoHS)	285.5	232.4	53.1	18.6	81.4
2019					
Personnel Emolument	206.6	313.6	(107.0)	(51.8)	85.4
Goods & Services	61.5	51.2	10.3	16.8	13.9
Current Transfers	46.9	31.7	15.2	32.3	8.6
Capital Transfers	52.3	3.2	49.0	93.8	0.9
Capital Expenditure			0.0	—	—
Total (MoHS)	367.3	399.7	(32.5)	(8.9)	108.9
AVERAGES					
MoHS (2015–2019)	288.6	285.4	3.2	1.8	98.2

Source: Authors' Calculations, from Sierra Leone's BOOST Database.

Note: Expenditure Figures are in Nominal Values. Figures in Parentheses Show Overspending.

BOX 1 Unleashing Potential of Devolved Healthcare Delivery System

Since 2004, the GoSL has embarked on a decentralization program aiming at making the delivery of social services more efficient at the local level. Health is among the sectors devolved to local councils. As part of the decentralized system in Sierra Leone, 19 local councils (LCs), comprising six municipal/city councils and 13 district councils, deliver primary and secondary health services at health facilities (health posts, health centers and district hospitals). Only tertiary health care provided by national hospitals is under the direct responsibility of the MoHS. At the local level, health programs are managed by District Health Management Teams (DHMTs) headed by District Medical Officers (DMOs). For their activities, DHMTs receive funding directly from the Ministry of Finance (MoF) and donors.

As a cornerstone of health service delivery, confronting the challenges facing the DHMTs will help to improve the health of the population. The decentralized system is rooted in the belief that it empowers local communities, engages them in the development process, and fosters local ownership—all characteristics that in principle could be said to be defining strengths for making health service delivery responsive to the needs of Sierra Leoneans. But in practice, the system is beset with weaknesses that impede its proper functioning.

Limited human resource, infrastructural and technical capacities hinder the effectiveness of district health facilities. There is a shortage of health and administrative personnel. Often, essential equipment is unavailable and many facilities, including hospitals, report frequent drugs stockouts. The Pujehun district hospital, for example, uses open pit burning as it does not have an incinerator. Most facilities report going without electricity for periods of 24 hours. This problem is commonplace in CHCs where other infrastructural challenges include inadequate or non-functional laboratory equipment and vaccine storage freezers and fridges. Maternal wards, postnatal rooms and examination rooms have inadequate beds and sometimes lack running water.

DHMTs lack effective financial management, procurement, internal audit, M&E, HMIS, and asset management capabilities. Coupled with fund flow bottlenecks, these challenges create budget execution performance difficulties for the DHMTs.

Grants from the central government are supposed to be distributed on a quarterly basis (four times in a year) through the inter-governmental fiscal transfer system. However, not only do LCs not often receive the full amount of budgeted transfers, but the timing of the transfers is often delayed. The ability of the councils (hence the DHMTs) to implement their budget is therefore undermined (DPPI, 2020). Interviews with three LCs in three different regions revealed these fund flow bottlenecks. In one LC, the four quarterly tranches of planned budget for 2019 were received, though with delays. In another, only three out of four tranches were received. In the third LC, only the first and second quarter tranches were received. Part of the problem may be linked to delays in reporting as well as errors in spending requests sent to the Accountant General. The Accountant General's office indicated that hospitals notoriously send their expenditure reports late. Lax oversight to enforce policy compliance could also be the issue.

Taking concrete steps to address the fund flow challenges as well as strengthening the capacities of the district health facilities and DHMTs will make them fit for purpose.

EFFICIENCY AND EQUITY ISSUES

7

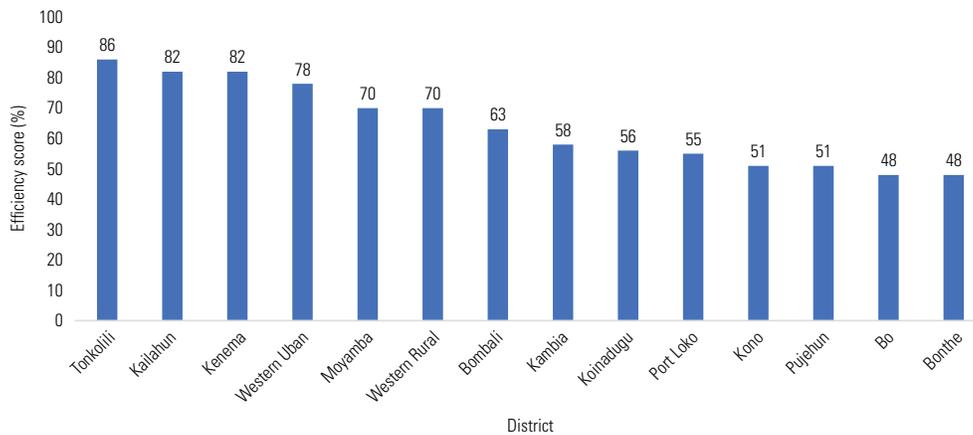
7.1. Efficiency Issues

Ensuring that funds are spent on priority health interventions is key but is far from enough to deliver health services efficiently. UHC requires high level of service output, which needs a high level of resource inputs. Limited resources must be used to deliver results and value for money for Sierra Leoneans as the Sierra Leone NHSSP 2017–2021 envisages. Attaining the highest level of health possible with the available resources is even more important given the COVID-19-induced fiscal constraints likely to squeeze government budget. Therefore, it will be critical to enhance spending efficiency. To that end, this section considers the operational performance of health facilities in Sierra Leone. It distils insights from a recent research on how health facilities deliver outputs using health care inputs, highlighting equity issues.

The overall average efficiency score of health facilities in Sierra Leone is 65 percent, according to a 2019 World Bank commissioned study. It means that to become efficient, health facilities could increase their output by 35 percent with the given levels of inputs. The study considered 539 (496 public—the focus of interest for this review—and 43 private) health facilities using a mix of input and output variables (Refer to Annex 2 for variables and their definitions).²⁸ The efficiency scores were estimated for the facilities across several dimensions, including facility type (hospital, health center and health post), rural vis-à-vis urban facilities, and among districts.

Across facility type, hospitals had the highest efficiency score of 90 percent, followed by health centers (76 percent) and health posts (61 percent). In other words, health centers and health posts were more likely to be inefficient compared with hospitals. In terms of the rural-urban divide, urban facilities scored relatively higher technical efficiency (77 percent) than rural facilities (60 percent). That means urban facilities were more likely to be efficient. On health facilities by district, the study revealed that no district had all facilities at optimum efficiency. Facilities in Tonkolili registered a relatively higher efficiency score of 86 percent,

²⁸ This review draws extensively on the findings of *Technical Efficiency of Health Facilities in Sierra Leone: A Data Envelopment Analysis*, which remain pertinent. The study did a two-stage analyses. First, it ran an output-orientation DEA model to estimate technical efficiency scores for the health facilities using R programming language (Benchmarking package). Second, Stata program version 15 was used for a linear regression of the technical efficiency scores against population level health outcomes.

FIGURE 15 District Facilities DEA Ranking

Source: Authors' Illustration Based on Data from *Technical Efficiency of Health Facilities in Sierra Leone: A Data Envelopment Analysis, 2019*

followed by those in Kailahun and Kenema with 82 percent each. Those in Bo and Bonthe had the least technical efficiency scores of 48 percent each as shown in Figure 15.

Bo and Bonthe were shown to require the highest increment in their efficiency scores (58 percent), while Tonkolili

needed the least (14 percent). As shown in Table 14, the study estimated amounts by which health facilities in each district needed to increase their output measures to attain optimum efficiency. For instance, Bo must increase its output as follows: outpatients by 312 percent; diagnostic accuracy index by 21 percent; process quality index by five percent;

TABLE 14 Output Increment Targets to Improve Efficiency

District	Outpatients (%)	Inpatients (%)	Diagnostic Accuracy (%)	Process Quality (%)	Management of Maternal and New-Born Complication (%)
Bo	311.9	0	21.4	5.2	9.2
Bombali	288.7	50.5	8.3	4.2	9.4
Bonthe	311.3	15.1	9.5	6.0	17.0
Kailahun	62.2	43.8	4.0	1.6	5.3
Kambia	506.6	0.0	5.3	4.2	15.4
Kenema	26.8	103.3	1.4	3.7	6.2
Koinadugu	268.4	0.0	7.7	3.6	5.0
Kono	291.3	0.0	2.6	5.5	11.8
Moyamba	478.2	0.0	4.5	9.2	13.9
Port Loko	131.6	0.0	6.6	5.3	8.4
Pujehun	175.0	675.5	3.2	1.9	4.1
Tonkolili	106.7	0.0	7.7	1.2	2.8
Western Rural	233.4	.	6.0	2.2	8.6
Western Urban	119.5	0.0	0.7	1.7	5.5

Source: *Technical Efficiency of Health Facilities in Sierra Leone: A Data Envelopment Analysis (DEA), 2019*

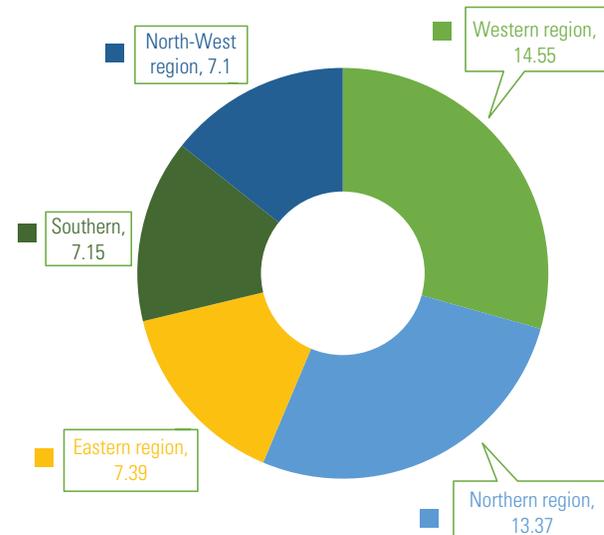
management of maternal and new-born complications index by nine percent. On the other hand, Tonkolili needs to improve outpatients by 107 percent; diagnostic accuracy by eight percent; process quality by two percent; management of maternal and new-born complications by three percent.

Of note, the evidence from the study comes with caveats. The inputs and outputs were gathered for a specific period. Hence the findings reflect the technical efficiency for that period only. It is noted that it will take further qualitative probing to determine why some facilities and districts perform less efficiently. Still, helpful insights emerge from the study that can inform how the GoSL can improve health service delivery. A key finding of the study was that improved efficiency would likely increase care-seeking for certain health conditions (acute respiratory infection among children), maternal care (blood pressure measured during antenatal care, facility delivery, skilled birth attendance), increase early initiation of breastfeeding and reduce child-mortality. It also points out several determinants of efficiency, including whether a facility is a hospital, community health center or community health post; and whether a facility is in a rural or an urban area.

7.2. Equity Issues

There are disparities in the deployment of health personnel and distribution of healthcare infrastructure to the detriment of rural communities. The efficiency study suggests that the ratio of average health personnel who regularly consulted patients in urban centers to rural communities was nearly five to one (28.3 to 6.4). Similarly, the average infrastructure index was about 90 (89.1) percent for urban facilities compared to about 70 (69.7) percent for the rural facilities, according to the study. It implies that there is an ease of access to health care for those who live in urban areas. The unequal health infrastructural distribution therefore deprives

FIGURE 16 Sierra Leone Household Consumption Expenditure on Health by Region, 2018 (%)



Source: Authors' Illustration Based on Data from 2018 SLIHS

rural communities, who rely the most on public health care services, of access to much needed healthcare.

While Sierra Leonean households spend an average 9.9 percent of the total household consumption expenditure on health, the spending shows inequities once it is unpacked according to locality, sex of household head, and region. Urban households spend an average of 12.43 percent compared to 8.35 percent by their rural compatriots (SLIHS, 2019). There is a gender gap in terms of household health consumption expenditure. On average, male-headed households' health consumption expenditure is 9.97 percent, while it is 9.76 percent for households with female heads. Across regions, Western households record the highest proportion of the total consumption expenditure on health at 14.55 percent and those in the North-West spend the least proportion (7.1 percent) on health (Figure 16).

FINDINGS AND RECOMMENDATIONS

The PER has identified several constraints that limit effectiveness, efficiency, and equity of public health expenditures in Sierra Leone. Key findings include:

- Unpredictable levels of health expenditure, which complicate planning and informed decision-making.
- Low capital expenditure has led to inadequate availability of health infrastructure, which has a serious impact on the efficient delivery of health services. It is noteworthy that, contrary to what usually happens in many developing countries, Sierra Leone's actual capital expenditure exceeded its budgetary allocation for three of the five years.
- Higher expenditure on personnel emolument, crowding out spending for goods and services such as drugs and medical supplies.
- Eighty-eight percent of capital expenditure was on capital transfers to other agencies of general government. However, the basis upon which the funds were transferred and for what purposes are unclear.
- Imbalance between allocations to hospitals (secondary and tertiary care services) and primary health care.
- Grant allocations to LCs for primary health care delivery are not tied to performance targets.
- Little or no spending dedicated to communicable diseases, which are leading causes of morbidity and mortality, due to unsustainable reliance on donor support.
- High budget execution rate, but there is room for improvement in terms of health outcomes.
- DHMTs have weak PFM systems as they lack effective financial management, procurement, internal audit, M&E, HMIS, and asset management capabilities.
- Improved efficiency likely to increase care-seeking for certain health conditions, maternal care, increase early initiation of breastfeeding and reduce child-mortality.
- High spending inequities leading to uneven distribution health facilities across the country.

Several issues emerge from this review that require more research. Policy recommendations are provided in Table 15 below. Yet several issues emerged from this review that require more research. More work will be required to assess (i) the extent to which

different segments of the population (e.g., the poor or the rich) are benefiting from the current allocation of health spending and to show whether a pro-poor benefit incidence is actually translated into better health outcomes for the

poor; (ii) whether district level spending decision-making and results monitoring frameworks are implemented; (iii) the scope for enhancing quality of care, particularly clinical effectiveness and diagnostic capacity of health workers.

TABLE 15 Policy Matrix of Recommended Reforms

Challenge	Recommendation
Low capital spending vs. recurrent	<p>Objective: Improve resource allocation and expenditure management</p> <p>Rationalize capital expenditure and recurrent expenditure with a view to improving capital spending thereby enhancing the state of health infrastructure.</p>
High personnel emolument vs. goods and services	<p>Objective: improve service delivery by ensuring regular supplies at all levels of the health services delivery systems</p> <p>Address the imbalance between spending on salaries and goods and services to ensure funds are available for procurement of the needed supplies to health facilities.</p>
Weak fiduciary management systems at the district level	<p>Objective: Strengthen fiduciary management systems.</p> <p>Strengthen the capacity of DHMT procurement and accounting staff to effectively manage the health budget.</p>
Imbalance between allocations to hospitals (secondary and tertiary care) and primary health care services.	<p>Objective: Increase allocation to primary health care (PHC)</p> <p>Rationalize allocation of the budget in favor of PHC, with an eye toward achieving universal health coverage.</p>
Inefficient health facilities	<p>Objective: Improve efficiency of health facilities</p> <p>Eliminate inefficiencies by ensuring that district health facilities make decisions based on outcomes produced and inputs used. A performance-based contracting mechanism that will provide funding to DHMTs based on measurable results could one way to achieve it.</p>

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ANNEX 1: STUDY METHODOLOGY

A three-pronged approach involving: (i) secondary documents review: a review of budget expenditure documentation, a review of government policies and strategies with a focus on the national development plan, health policy and strategy. The aim was to ascertain the extent to which resource allocation addresses the stated government policy goals, objectives, and strategies; (ii) primary data collection with targeted key informant interviews. This was done through structured interview guides that formed the basis for stakeholders' consultation. The objective was to understand the underlying causes of bottlenecks to effective and efficient resource allocation and expenditure management; (iii) stakeholder consultations that enabled the team to discuss key public health expenditure issues. Major stakeholders consulted include: the Ministry of Finance, Ministry of Health and Sanitation (MOHS), Accountant General Department (AGD), Local Councils (LCs); District Health Management Teams (DHMTs), and health facilities (tertiary hospitals, district hospitals, primary health care units [PHUs]).

The information obtained from secondary documents review, primary data collection, and stakeholder consultations enabled the team to undertake analysis of four public expenditure review (PER) concepts: (i) level and composition of public health expenditure; (ii) efficiency of public health expenditure; (ii) effectiveness of public health expenditure and (iii) equity of public health expenditure. With the push for Universal Health Coverage²⁹ around the world, the analysis of level of health expenditures is critical. For that reason, the study team sought to ascertain the extent to which Sierra Leone's health expenditure compares with comparable countries within the sub-Saharan Africa region and elsewhere in the world. This analysis focused primarily on comparing Sierra Leone health expenditure with its peers in the West Africa subregion and low-income countries. To further deepen the analysis, the study team compared Sierra Leone's health expenditure using the human capital index as a criterion. At the national level, the study team sought to ascertain the extent to which spending on health compares with other sectors of the economy, particularly the social sectors. Key analytical questions that were asked include: What is Sierra Leone's total health expenditure as a percentage of its Gross Domestic product (GDP)? What is Sierra Leone's per capita health expenditure? How do they compare with the rest of the world? What is the share of the national budget allocated to health compared with other sectors?

²⁹ All people in a society are able to obtain the health services that they need, of high-quality, without fear that the cost of paying for these services at the time of use will push them into severe financial hardship".—WHO (2017).

Analysis of composition of health expenditures hinges on ascertaining classification of health expenditures using the Government of Sierra Leone's (GoSL) budget nomenclature for expenditure classifications. The analysis of economic classification of health expenditures (disaggregation of expenditures into recurrent and capital expenditures) portrays the nature of the use of health expenditure. Key analytical questions the team sought to understand were: What is the nature of the expenditures? Are funds used to pay wages and salaries, for capital projects, or social assistance benefits? Is there a balance between recurrent expenditure and capital expenditure? Is recurrent expenditure adequately covered to ensure smooth and uninterrupted provision of health services, including maintenance of health infrastructure and equipment? Is there a good balance of spending on wages and salaries vs. goods and services? The analysis of functional classification of expenditures is intended to understand whether health expenditure is classified by functions according to international standard classification-i.e. in line with Organization of Economic Cooperation and Development (OECD) and The United Nations Classification of Functions of Governments (COFOG). Functional classification allows us to ascertain the purpose for which the budget is spent, and it underpins allocative efficiency of health expenditure. How much is allocated to PHC as opposed to secondary tertiary care? The analysis of classification of expenditure by program seeks to ascertain the extent to which allocation of health expenditure address priority health programs. Key analytical question the team sought to understand is: Are priority health programs and subprograms adequately covered?

The team also reviewed health sector performance focusing primarily on the main components of the health systems as defined by WHO health system's building blocks. Given that the health budget is implemented by various structures, institutions and actors across the health sector, the team reviewed the structure and organization of health services delivery in Sierra Leone. This review provided the team with the basis of flow of resources from national to the lower level of the health care delivery system.

Analysis of allocative efficiency. The review of health policy and strategy documents allowed the team to perform analy-

sis of allocation efficiency. This was done in two dimensions: (i) reviewing budgetary allocations and comparing them to priority programs set out in the NDP and national the health strategy. The aim was to ascertain whether the health budget was allocated to the right programs that help improve health outcomes; and (ii) disaggregating expenditures by functions using COFOG classifications and comparing the share of each function according the stated priorities of the health policy and strategy.

Technical efficiency. The analysis of technical efficiency allowed the team to understand the concept of value for money. This analysis was conducted using the Data Envelopment Analysis (DEA) methodology. DEA is a performance measurement technique which is used for comparing the performances of similar units. The health facilities for which the performance analysis was done are called decision making units (DMUs). This was done by reviewing a recent World Bank-commissioned technical efficiency study which sampled 539 health care facilities to achieve maximum output with the least input. Efficiency was therefore measured using a ratio of weighted output to input.

Effectiveness of health expenditure. The analysis of the effectiveness of health expenditures focused on examining budget execution performance. This entailed a comparison of budget outturns against approved budgets with a focus on economic classification of expenditures. The objective was to ascertain evidence of significant underspending and overspending of the approved budget. This allowed the team to estimate deviations from the approved budget as well as the budget execution rates. It also allowed the team to understand key bottlenecks to expenditure management at all levels of the health care delivery system.

Equity of distribution of health expenditures. Under this analysis, the team sought to (a) document how health outcomes vary across different groups of the population, (b) describe disparities in access and usage of health services, and (c) understand the extent to which public health expenditures are equitably distributed across the country. The team used data from the National Household Survey (IHS 2018) to show spatial differences between districts (and between urban and rural areas), and variation across age groups and gender.

ANNEX 2: DEFINITIONS OF HEALTH INPUT AND OUTPUT INDICES

Variables	Definition
Input variables	
Infrastructure index	Proportion of infrastructure items available out of electricity, safe water, and toilet facility at the time of survey
Equipment index	Proportion of medical equipment available out of the recommended equipment for a specific facility—a weighing scale (adult, child or infant), a stethoscope, a sphygmomanometer and a thermometer and a refrigerator, and additionally sterilization equipment at health center and hospital levels at the time of survey
Drug index	Proportion of unexpired drugs available out of drugs recommended for a specific facility. They were based on World Health Organization's drug list for core primary healthcare conditions (adapted to country context and level of facility)
Beds*	Number of beds available in hospitals at the time of survey
Staff	Total number of health workers that regularly consult patients
Output variables	
Outpatients	Total number of outpatient visits during the previous three months of the survey
Inpatients*	Total number of inpatient admissions during the previous three months of the survey
Diagnostic accuracy index	Proportion of cases correctly diagnosed out of a total of seven (malaria with anemia; diarrhea with severe dehydration, pneumonia, pulmonary tuberculosis, diabetes, post-partum hemorrhage and neonatal asphyxia) by a health worker
Process quality index	Proportion of actions performed out of all recommended actions in the national clinical guidelines in managing five tracer conditions (diarrhea with severe dehydration, pneumonia, malaria with anemia, pulmonary tuberculosis and diabetes type 2).
Management of maternal and new-born complications index	Proportion of relevant treatment actions proposed by the clinician for the two conditions selected (post-partum hemorrhage and neonatal asphyxia)

* Beds and inpatients were considered only for the hospitals.



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