
9 October 2016
Contents

Executive Summary i
Introduction 3
   A Well-Functioning Healthcare System 3
   Political and Economic Situation 4
   Other Determinants of Health 5
   Overview of its Health System 10
Healthcare Expenditure 13
Healthcare Financing System 16
   Revenue Collection 16
   Pooling and Purchasing 20
Healthcare Delivery 22
   Service Delivery 22
   Human Resource 23
   Drugs and Medical Supplies 28
   Public-Private Partnership (PPP) Projects 28
Assessment 30
   Adequacy 30
   Efficiency 30
   Equity 31
Case Studies 33
   South Africa 33
   Rwanda 34
   Cuba 35
   Thailand 36
   Singapore 37
Recommendations 39
   Healthcare Financing Strategy 39
   Expanded Role of Private Sector 40
   Use of Telemedicine 41
   Conclusion 42
References 43
<table>
<thead>
<tr>
<th>ACRONYM</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>CBOH</td>
<td>The Central Board of Health</td>
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<tr>
<td>CSMBS</td>
<td>Servants Medical Benefit Scheme (Thailand)</td>
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<td>DCST</td>
<td>District Clinical Specialist Team (South Africa)</td>
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<td>DFID</td>
<td>Department for International Development</td>
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<td>DHBs</td>
<td>District Health Boards</td>
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<td>District Health Management Teams</td>
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<td>Latin America Medical School, Cuba</td>
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<td>Gross Domestic Product</td>
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<td>General Practitioner</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>HR</td>
<td>Human Resource(s)</td>
</tr>
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<td>ICTs</td>
<td>Information and Communication Technologies</td>
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<td>ITN</td>
<td>Insecticide-treated Net</td>
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<tr>
<td>MAF</td>
<td>Microinsurance Acceleration Facility</td>
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<td>MCDMCH</td>
<td>Ministry of Community Development, Maternal and Child Health</td>
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<td>MDG</td>
<td>Millennium Development Goal</td>
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<td>MNC</td>
<td>Multi-national Corporation</td>
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<td>MOF</td>
<td>Ministry of Finance, Zambia</td>
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<td>MOH</td>
<td>Ministry of Health, Zambia</td>
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<td>MoPH</td>
<td>Ministry of Public Health (Thailand)</td>
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<td>MSL</td>
<td>Medical Stores Limited</td>
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<td>NCD</td>
<td>Non-Communicable Diseases</td>
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<td>NGO</td>
<td>Non-governmental Organisation</td>
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<td>National Health Insurance (South Africa)</td>
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<td>NHSO</td>
<td>National Health Security Office (Thailand)</td>
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<td>NHSP</td>
<td>National Health Strategy Plan</td>
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<td>O&amp;G</td>
<td>Obstetrics and Gynaecology</td>
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<td>OOP</td>
<td>Out-of-pocket</td>
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<td>PEPFAR</td>
<td>U.S. President's Emergency Plan for AIDS Relief</td>
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<td>PF</td>
<td>Patriotic Front</td>
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<td>PHC</td>
<td>Primary Healthcare</td>
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<td>PMI</td>
<td>Private Medical Insurance</td>
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<td>Public-Private Partnership</td>
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<td>SEK</td>
<td>Swedish Krona</td>
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<td>SHI</td>
<td>Social Health Insurance</td>
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<td>SIDA</td>
<td>Swedish International Development Cooperation Agency</td>
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<td>SSS</td>
<td>Social Security Scheme (Thailand)</td>
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<td>SWAp</td>
<td>Sector Wide Approach</td>
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<tr>
<td>TB</td>
<td>Tuberculosis</td>
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<td>UHC</td>
<td>Universal Health Coverage</td>
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<td>US DoD</td>
<td>United States Department of Defence</td>
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<tr>
<td>UTH</td>
<td>University Teaching Hospital, Lusaka</td>
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<tr>
<td>WSP</td>
<td>Water and Sanitation Programme</td>
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<tr>
<td>ZAMRA</td>
<td>Zambian Medicines Regulatory Authority</td>
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<tr>
<td>ZMW</td>
<td>Kwacha (Zambian currency)</td>
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</table>
Executive Summary

Outcomes

As a relatively young nation of 52 years, Zambia has made progress in its healthcare system, witnessing improvements in health outcomes over the last few decades. It achieved its health MDGs in the areas of HIV/AIDS and tuberculosis. Furthermore, the country made advancements in combating malaria and in reducing maternal and child mortality rates. However, its healthcare system still suffers from inadequacy, inequities and inefficiencies.

A health valuing environment is a key ingredient of any well-functioning health system. This takes into account leadership and governance; the political and economic situations; and social determinants of health. In addition to an economic slowdown, Zambia also needs to grapple with housing, sanitation, cultural, energy and geographical challenges which may hinder the attainment of quality, accessible and affordable healthcare for its people. It is not helped by the fact that Zambians have a relatively low willingness to seek and pay for health services.

Compared to peer countries (other lower-middle income countries globally), Zambia is not spending enough on healthcare. Public expenditure on healthcare stood at 11.3% of total government expenditure in 2014, less than the 15% target set by the 2001 Abuja Declaration. Out-of-pocket payment is relatively high at about 30% of total health expenditure in 2014—well above the 20% limit suggested by the WHO.

Analysis

The healthcare financing system should be capable of raising adequate funds. However, Zambia relies significantly on donor funding which exposes it to variations, suspension and termination, compromising long-term planning for health. Healthcare also faces increasing competition for general taxation funds in light of other national priorities. The proposed social health insurance scheme (SHI) would serve as an alternative source of revenue, but its implementation is delayed, and it will not cover the informal sector initially.

The healthcare financing system should also effectively pool resources to share financial risks and ensure efficient use of funds for purchasing of services. Pooling of government and donor funds with the MOH had positive effects on financial protection and access to services. However, the reversion to a centrally controlled governance structure after 2005 could have led to adverse effects on purchasing. This was mainly due to the loss of capacity in community engagement, erosion of a robust health management system and the removal of the provider-purchaser split.

The delivery system faces chronic shortage of clinical staff and inequitable distribution of human resources. There is also an urban-rural divide as health workers shun rural areas, and facilities in rural areas are few and far between. The delivery system is hampered by weak health infrastructure and the lack of essential drugs and medical supplies in health facilities. Nevertheless, there are positive examples of PPP projects which the government should continue to tap on for capacity building.

Our assessment points to a health system that is inadequately self-sufficient in funding; inefficient in flow of funds through the various functions due to leakages; and financial protection and equity in payment, service use and benefits allocation are not achieved.
Recommendations

We recommend a three-pronged approach to strengthen the overall health system. Firstly, a healthcare financing strategy should be developed which would outline the challenges in financing, articulate objectives and propose specific interventions to ensure adequacy, equity and efficiency. Following which, the government should proactively enable the private sector to expand their presence, especially through participation in the SHI, devising innovative financing and care models and other PPP opportunities. Separately, Zambia should leverage on telemedicine as a significant enabler of affordable and accessible quality healthcare. Modern information and communication technologies would ameliorate some of the care delivery challenges Zambia faces as a relatively large country with a dispersed population.
Introduction
A Well-Functioning Healthcare System

Three goals of a well-functioning healthcare system

**Quality**
- Extent to which health delivery services improve health conditions or meet targeted health outcomes
- Requires a professional and committed healthcare workforce
- Technical competency to deliver the most effective diagnosis, treatment and rehabilitation
- Resilient to cope with any unexpected healthcare

**Affordability**
- Reducing direct, out-of-pocket (OOP) payments
- Protection from "financial ruin" or harmful effects on people’s livelihood
- Includes not just the price of the health services but also indirect and opportunity costs
- Equity in finance
- Sustainable financing sources to ensure financial security in the health system

**Accessibility**
- Physical availability of health facilities within reasonable reach
- Includes other aspects of service organization and delivery e.g. opening hours, appointment systems, etc. which allow people to obtain the services when they need them

**Health Valuing Environment**
- Leadership and governance
- Social determinants of health
- People’s willingness to seek health services
- Political and economic situations

Figure 1: Framework of a well-functioning healthcare system

**Three Goals** – A well-functioning national healthcare system meets the priorities and expectations of the population through the provision of good quality and accessible health services at a reasonable cost. These three goals form the foundation of the World Health Organisation’s (WHO) clarion call for Universal Health Coverage and have been the focus of health planners the world over. In Zambia, all three goals are found in the health sector’s vision of attaining “equity of access to cost-effective quality health services, as close to the family as possible”. [1]

**Potential Trade-offs** – These goals may compete with each other such that trade-offs are necessary. For example, increasing access to health services could come at a higher cost, or result in lowered quality. However, there are potentially opportunities to improve on all three fronts with innovative care models and use of technology. For example, inexpensive point of care diagnostics for malaria or tuberculosis useable by lay persons, coupled with tele-medical support from a central hospital, would enable rapid identification and appropriate treatment of afflicted patients at lower overall societal costs.

**Quality** – Quality refers to the extent to which health delivery services improve health conditions or meet targeted health outcomes of individuals, families and communities. Quality healthcare requires execution by a professional and committed healthcare workforce enabled by appropriate technologies and systems. Importantly, a high quality health system should also be resilient to cope with any unexpected healthcare emergencies (e.g. outbreak of infectious diseases, or mass casualty situations).

**Affordability** – Affordability is measured in two dimensions—affordability from the perspective of patients and their families, and affordability from the national perspective, in the sense that
healthcare costs are sustainable, and do not excessively take away from other essential government services such as education. At the individual and family levels, affordability can be improved by risk pooling that reduces direct, out-of-pocket (OOP) payments. Ideally, affordability must consider not only the price of health services, but also indirect and opportunity costs (e.g. costs of transportation to and from facilities, and of being away from work).

**Accessibility** – This is defined as the physical availability of health services within reasonable proximity of those who need them and of other aspects of service organization and delivery, e.g. opening hours, appointment systems, etc. that allow people to obtain the services when they need them. [2]

**Health Valuing Environment** – Underpinning these three goals is a health valuing environment which will either hinder or enable the attainment of these goals. This takes into account leadership and governance; the political and economic situations; and other social determinants of health (e.g. housing, education, and sanitation). It also captures people’s willingness to seek and pay for health services. Acceptability could be low when people deprioritise health services, or when cultural factors such as ethnicity or religion discourage them from seeking services.

**Political and Economic Situation**

**Political Situation**
Zambia is among the most politically stable countries in Africa, and has enjoyed sustained periods of peace since independence in 1964. Kenneth Kaunda led Zambia under single-party socialism for three decades since independence. [3] He initiated central planning of the economy and nationalised key sectors, notably the copper industry. Under popular pressure in 1991, a constitutional change took place allowing a multi-party system. This change preceded six successful democratic elections.

Its current president, Edgar Chagwa Lungu of the Patriotic Front (PF) came into power in January 2015 in a presidential by-election, beating his closest rival, Hakainde Hichilema by a narrow majority of 1.66%. The PF has focused since then on key efforts to improve service delivery by modernising and improving accessibility of hospitals, alleviating shortages of medical HR, ensuring fair distribution of medical HR, developing a well-functioning health information system, investing in a National Social Health Insurance (SHI) Scheme to ensure adequacy of funds, and instituting leadership and governance above all. [4]

**Economic Situation**
Zambia enjoyed rapid economic growth over the last few decades until 2010 as the second largest copper producer in Africa. Copper accounts for more than 70% of export earnings and employs more than 60,000 people. [5] However, a slow-down in copper demand from China (Zambia’s top trading partner) and hence falling prices has put pressure on the economy. Zambia is also facing internal issues of budget deficit, liquidity pressures and growing government debt, which is forecasted to exceed 60% of GDP by 2018. This led Moody’s Investors Service in New York to cut the country’s credit rating in April 2016. [6]

According to the World Bank, 60% of the population lives below the poverty line and 42% are considered to be in extreme poverty. Moreover, the absolute number of poor has increased from approximately 6M in 1991 to 7.9M in 2010, primarily due to a rapidly growing population [7]. The growing population places substantial burden on government finances, particularly in sustaining the country’s capacity to keep pace with the health needs of a larger population base. Zambia also has one of the highest Gini coefficients globally (57.5) [8] with 45% of the national wealth concentrated in just 10% of the population. [9]
Other Determinants of Health

Besides the political and economic environment, many other factors come together to affect the health of individuals and communities as well as the functioning of the healthcare system. Such determinants of health include the physical environment (e.g. geography, housing, sanitation, energy situation) and the population's cultural and personal beliefs.

Geography

With a total surface area of 751,610 km$^2$ and a population of 14.6 million people, the population density in Zambia is among the lowest in Sub-Saharan Africa, representing one of the most land abundant countries in the region. [10] Outside of urban areas, the nation is also sparsely populated. The vast expanse of land together with low population density presents significant challenges in healthcare delivery.

It is also a landlocked country, sharing borders with eight other countries. This geographical attribute poses risks to the sexual and reproductive health of Zambians. Truck drivers who transport goods between the countries have been major conduits of sexually transmitted diseases and HIV. [11] For example, Mukuni, a village near the border of Zambia and Botswana has one of the nation’s highest HIV prevalence at 27% and this is attributed mainly to the congregation of truckers, fishermen and traders in the border village.

Housing

Up to 40% of Zambians live in the urban area. However, an estimated 70% of these urban dwellers live in slums. The rise of unplanned settlements has been a result of the government’s inability to provide adequate low-cost housing. [12] The lack of essential infrastructure and services predisposes
slum residents to ill health, particularly because of inadequate access to clean water and safe sanitation facilities. Overcrowding and poor living conditions also promote the spread of airborne diseases such as tuberculosis and other respiratory infections.

Sanitation
According to the Water and Sanitation Programme (WSP) administered by the World Bank, Zambia risks losing up to US$194M annually due to the effects of poor sanitation. [13] In 2012, about 4M Zambians used unsanitary or shared latrines, while 2M had no latrine at all and defecated in the open. Of the potential financial loss, more than 80% is attributed to health related premature death from poor water sanitation and hygiene. There is an alarming mortality rate due to poor sanitation: about 8,700 Zambians, including 6,600 children under 5, die each year from diarrhoea (about 90% directly attributed to poor water, sanitation and hygiene). [13]

Energy
There is a nation-wide power deficit of 34% of electricity demand. [14] Lack of energy services severely limits the types of health services that can be provided. For example, lighting, minimal laboratory equipment, computers, communication devices, and cold storage are all essential tools for providing basic levels of medical care, and all require power. Furthermore, availability of power was cited repeatedly in Zambia as being a key condition for attracting and retaining medical staff to rural health facilities. [15]

Culture and Personal Beliefs
Certain Zambians tribes remain entrenched in cultural or religious beliefs that can have adverse effect on health (e.g. encouraged to sit underneath a fever tree to get well, practising witchcraft, early marriage of females, or polygamy). Although these practices are disappearing with time, in line with the modernisation of society and increasing literacy rates, they are still observed in certain rural areas.

Also, the importance of district and tribal chiefs in healthcare cannot be overstated. As the custodians of cultural traditions, and with authority over people in their tribes and districts, they play significant roles as gate-openers and change agents in healthcare. As gatekeepers, they open doors to health advocates, lending them legitimacy in the community. Also, social marketing can occur when a traditional leader develops a level of expertise and speaks out on the issue of healthcare. Finally, these leaders can build local capacity in health, working with the government and NGOs to develop strategies for promotive, preventive and curative healthcare. [16]

Healthcare has been reported to be low on the priorities of the population and correspondingly has a small “wallet share” for many people. Anecdotally, mobile airtime, food and alcohol rank higher than healthcare. This claim was substantiated by a 2015 survey on Zambians’ usage of income – tuition fees, rent, fuel/electricity and mobile airtime received priority for regular expenditure, in addition to food and clothes. [17]
Overview of its Health System

Organisation of the Health System

Organisational chart of the public health system at the central, provincial and district level

The public health system adopts a four-level policy and implementation structure:

- The Ministry of Health (MOH) is responsible for policy, strategy, regulation, international relations, resource mobilization and standard setting;

- Provincial Health Offices are responsible for coordination of health services, technical support, dissemination of health policies and performance management at the provincial level. They also directly manage 2nd level hospitals;

- District Health Offices are responsible for management, coordination and supervision of health facilities at district level, including 1st level hospitals, health centres and health posts;

- Neighbourhood Health Committees are responsible for mobilising people in the community for health promotion activities and providing information to the district on health priorities.

In addition, national units were established under the MOH to oversee specific health programmes (e.g. the National Malaria Control Centre, Child Health Unit, Reproductive Health Unit, the National Tuberculosis, the National Aids Council, etc.).

Healthcare is provided by a range of providers, including the MOH, church organisations (most notably the Churches Health Association of Zambia) and the private sector. The vast majority of health facilities (1,956) are owned and operated by the public sector. In addition, there are 116
health facilities provided by churches and 250 private health facilities. [18]

The public service delivery system is designed with the following structure: Health posts; Health centres; 1st level hospital (district); 2nd level hospital (general/province); and 3rd level hospital (central).

Evolution of the Health System

- After independence in 1964, the government took over health facilities that had been operated by the colonial government and NGOs.
- Over the next two decades, standards of health facilities declined.

- The Medical Services Act of 1985, initiated the health sector's decentralization through the creation of semi-autonomous hospital management boards for all hospitals with >200 beds.

- Health Services Act of 1995, introduced to "provide equity of access to cost-effective, quality health care as close to the family as possible."

- Primary health care functions were transferred from the MOH to the Ministry of Community Development (renamed the Ministry of Community Development, Maternal and Child Health).
- The objective was to garner community involvement for healthcare and to address social determinants of health.

- Post-elections in 1991, the Zambian health system was reformed.
- Key intent of the health reforms was to provide a service that was responsive to local needs by decentralization of decision making to districts and through encouraging local representation on health management boards.

- The Health Services Act was repealed and the health sector went through a major structural reform, reversing the earlier decentralised health system and reverting to a centrally controlled governance structure.

- In early 2016, the primary health care function returned to the MOH as the earlier transfer resulted in some fragmentation of decision-making around curative versus preventive care, and between different levels of care.
After independence in 1964, the government took over health facilities that had been operated by the colonial government and NGOs. Over the next two decades, standards of health facilities declined. Due to financial constraints, facilities were unmaintained, supplies such as drugs became scarce, and clinical staff were demoralised. [19]

The Medical Services Act of 1985 initiated the health sector’s decentralisation through the creation of semiautonomous hospital management boards for all hospitals with over 200 beds. This marked a significant turning point to address the inadequacies, inefficiencies, and inequities of the health care sector to make it more responsive to community and households.

Post-elections in 1991, the Zambian health system was reformed. It became operational with the Health Services Act 1995, intended to provide equity of access to cost-effective, quality health care as close to the family as possible. [20] The key intent of the 1991 health reforms was to provide a service that was responsive to local needs by decentralisation of decision making to districts and through encouraging local representation on health management boards. A provider-purchaser split was instituted such that the purchasing or commissioning of health services was kept organisationally separate from the service providers. The MOH was given responsibility for policy, financing, regulation and service provision through its facilities while a new organisation, the Central Board of Health (CBOH), was tasked with service implementation and purchasing/commissioning of health services.

In 2005, the Health Services Act was repealed and the health sector went through a major structural change, reversing the earlier decentralisation and reverting to a centrally controlled management structure. The catalyst was a detailed MOH report, “Institutional and Capacity Appraisal”, which blamed the CBOH, and the District and Hospital Boards for structural inconsistencies with the rest of the public sector, lopsided incentive structure in the health sector and high operational cost. [21]

In 2012, primary health care functions were transferred from the MOH to the Ministry of Community Development (renamed the Ministry of Community Development, Maternal and Child Health). The objective was to garner community involvement for healthcare and to address social determinants of health.

In early 2016, the primary health care function returned to the MOH. The earlier transfer had resulted in some fragmentation of decision-making around primary versus advanced levels of care, and between the different levels of the hierarchy in the health system (i.e. health posts, health centres and hospitals). [20]

**Key Policies**

Zambia is currently implementing the National Health Strategy Plan (NHSP) 2011–2016, which presents a six-year strategic development agenda for the health sector. The NHSP is aligned to Zambia’s “Vision 2030” (which outlines long term strategies for Zambia that cut across all sectors of governance) and the “Sixth National Development Plan 2011-2016”. The NHSP identifies priority interventions for attaining health improvement through effective coordination, implementation and monitoring of health services. The overarching objectives are to reduce the burden of disease, reduce maternal and infant morbidity and mortality, and to increase life expectancy through the provision of a continuum of quality, effective health care services as close to the family as possible in a competent, clean and caring manner. [22]

The current NHSP covers the period during which the Millennium Development Goals (MDGs) came to an end in 2015. Top diseases are on a downwards trend and Zambia achieved the MDGs in HIV/AIDS and tuberculosis. However, challenges in equity, adequacy and efficiency (see Assessment below) remain.
The MOH is currently developing the NHSP 2017–2021. It will build upon the current NHSP and be aligned with the WHO’s six health system building blocks, namely service delivery, health workforce, health information systems, access to essential medicines, financing and leadership/governance. Importantly, the new NHSP will focus on primary healthcare which lacked emphasis in the previous plan. The new plan will also feature four key aspects of delivery (non-communicable diseases (NCD), communicable diseases, maternal and child health and community/primary healthcare).

The Sector Wide Approach (SWAp) is a memorandum of understanding between various stakeholders in the health sector on how activities shall be carried out between the government and its partners such as civil society organisations, bilateral and multilateral partners. The SWAp outlines processes of reporting and monitoring, meetings and working groups on key thematic areas, such as health care financing, service delivery and human resources for health. [22] The SWAp is significant as it reflects a desire by both the MOH and its partners to avoid duplication of services, minimise inequitable policies and allow the MOH more flexibility to allocate funds in accordance to its health priorities and plans.

**Current Health Indicators**

This section addresses Zambia’s progress in the attainment of its healthcare related MDGs.

**HIV**

HIV/AIDS is the leading cause of death, killing 36.0K people in 2012. [23] The prevalence of HIV in Zambians age 15-49 has dropped from 15.6% in 2001-2002 to 13.3% in 2013-2014 (it has met its MDG 2015 target of prevalence <15.6%). HIV prevalence is higher among women (15.1%) than among men (11.3%). HIV prevalence is also higher in urban areas than in rural areas for both women and men. Regionally, HIV prevalence ranges from a low of 6.4% in Muchinga to a high of 18.2% in Copperbelt. [24]

![Figure 6: HIV prevalence](image-url)
Malaria
Malaria is the leading cause of both sickness and death in Zambia. It is the third leading cause of death, killing 10.7K people in 2012. [23] The disease accounts for about 40% of all hospitalisations. The new malaria cases per 1,000 population have decreased from 412 in 2006 to 260 in 2012 (just shy of the 2015 MDG target of less than 255 new cases per 1,000 population).

Malaria especially affects pregnant women and children so interventions are often targeted at these groups. The use of insecticide-treated nets (ITN) has been found to be one of the most cost-effective ways of preventing malaria. Among all households in Zambia, two-thirds own at least one ITN. However, only 27% of households have enough ITNs to cover each household member. [24]

Ownership of, Access to, and Use of ITNs

<table>
<thead>
<tr>
<th>Ownership of at least 1 ITN</th>
<th>68%</th>
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<tr>
<td>Year with an ITN to cover the population</td>
<td>47%</td>
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<tr>
<td>Year with an ITN within their household</td>
<td>35%</td>
</tr>
<tr>
<td>Year slept under an ITN</td>
<td>27%</td>
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</tbody>
</table>

Trends in ITN use

<table>
<thead>
<tr>
<th>Children who slept under an ITN the night before the survey</th>
<th>2001–02 ZDHS</th>
<th>2007 ZDHS</th>
<th>2013–14 ZDHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>New malaria cases per 1,000 population target</td>
<td>412</td>
<td>252</td>
<td>260</td>
</tr>
</tbody>
</table>

1. Assuming one ITN covers 2 people
2. Source: Zambia Demographic and Health Survey 2013–2014

Maternal and Child Health
Although the maternal mortality rate has reduced from 580 per 100,000 live births in 1990 to 280 per 100,000 live births in 2013, there is still a long way to go to achieve the 2015 MDG target of 162 per 100,000 live births. [23] Over 70% of these deaths are caused by complications that could have been treated with skilled care. It is imperative to have access to antenatal care and the presence of a trained nurse, midwife or physician at the birth to reduce maternal mortality rates.

The under-five mortality rate fell from 193 per 1,000 live births in 1990 to 83 per 1,000 live births in 2007. Although Zambia is making good progress towards this goal, it is still short of the 2015 MDG target of 63 per 1,000 live births.
Under-five mortality rate per 1,000 live births 1990-2015

Maternal mortality ratio per 100,000 live births 1990-2015

Source: WHO Statistical Profile 2015

Figure 8: Maternal and under-five mortality rates

Tuberculosis
Tuberculosis (TB) is the eighth leading cause of death, killing 3.7K people in 2012 [23]. The country has achieved a downward trend in the TB mortality rate (decreased from 35 per 100,000 population in 2000 to 25 in 2013). In line with this, the TB treatment success rate has been on the rise since the 2000s, and Zambia has met its 2015 MDG target of 85% success rate.

Figure 9: Tuberculosis mortality and treatment success rates

Healthcare Expenditure

GDP per capita vs. total healthcare spending
2013, USD

As countries become more affluent (increase in GDP per capita), they spend more on healthcare (i.e. both total and government healthcare expenditures).

Figure 10: Chart of income status vs health expenditure
Figure 11: Trends of health expenditures vs GDP

As the GDP of Zambia increased in the last five-year period from 2010–2014, total health expenditure also increased, mirroring overall growth. However, public health spending had been affected by the economic slowdown in recent years. The proportion of government expenditure on healthcare stagnated as real GDP growth declined.

<table>
<thead>
<tr>
<th>Country</th>
<th>Avg. lower-mid income countries</th>
<th>Global average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Total health expenditure (2014)</td>
<td>5.0%</td>
<td>5.9%</td>
</tr>
<tr>
<td>2 Zambia’s government expenditure on healthcare (2014)</td>
<td>11.3%</td>
<td>10.0%</td>
</tr>
<tr>
<td>3 Per capita government expenditure on health (2014)</td>
<td>$108</td>
<td>$169</td>
</tr>
<tr>
<td>4 External sources account for total health sector expenditure (2014)</td>
<td>38%²</td>
<td>14%</td>
</tr>
<tr>
<td>5 Out-of-pocket (OOP) payments, in 2014</td>
<td>30%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Source: WHO, 2014

Figure 12: Global benchmark of health expenditure
Compared to peer countries (lower middle income countries) and global averages, Zambia is not spending enough on health care (both total and public expenditure), relies significantly on external financing sources, and OOP payments are relatively high.

- **In 2014**, total health expenditure accounted for 5.0% of the country’s GDP, an amount that was lower than the average of 5.9% for other lower-middle income countries and well below the global average of 6.8%. [25]

- Zambia’s government expenditure on healthcare stood at about 11.3% of total government expenditure in 2014, slightly higher than the average of 10.0% for other lower-middle-income countries. However, it did not meet the 15% target set by the Organisation for African Unity’s 2001 Abuja Declaration. It is almost on par with the global average of 11.8%. [25]

- Per capita government expenditure on health in 2014 was $108 (in terms of purchasing power parity), substantially lower than the lower-middle income country average of $162 and almost nine times less than the global average of $912. [25] This could indicate the government’s weak commitment to the health sector as it is lagging behind its peers and globally.

- More than a third (38%) of the total health sector expenditure in 2014 was funded by external sources (funds or services in kind provided by foreign entities and may come from international organizations, other countries through bilateral arrangements, or foreign nongovernmental organizations). [25] This is very high for a lower-middle-income country (where the average for that year was 14%). This represents a high reliance on donor support for health in Zambia.

- OOP payments in 2014 stood at ~30% of total health expenditure. This was about a quarter lower than the lower-middle-income country average of 39% and close to the global average of 31%. However, there is still some distance to close the gap to reach the 20% limit suggested by the 2010 World Health Report to ensure that financial catastrophe and impoverishment as a result of accessing health care become negligible. [25]
Healthcare Financing System

The healthcare financing system is a key component of the overall healthcare system. It should be able to raise adequate funds for health and pool financial resources across population groups to share financial risks. It should also have a governance system to ensure efficient use of funds during the purchase of services. The key challenges in revenue collection, pooling and purchasing are highlighted in this section.


Revenue collection

There were four main sources of revenues for health care in 2006, the latest year for which data is available publicly—donor funding, OOP payments, tax-based government financing and private medical insurance. Interviews with key stakeholders suggest that the relative proportions remain broadly similar today.

Tax-based government financing was the 3rd largest source. This comprises direct and indirect taxes, which made up 48% and 52% of total taxes respectively in 2007. [20] The MOH faces increasing...
competition for general taxation funds in light of other national priorities e.g. energy, education, mining, tourism, agriculture, etc.

A public financing model, in the form of a SHI scheme, is being developed and could change the relative proportion of revenue collected when it is implemented in 2017.

Donor Financing
Zambia relies significantly on donor funding (amounting to 42% of overall healthcare revenue) in 2006. It is therefore vulnerable to variations, suspension and termination in donor financing. The vulnerability also compromises long-term planning for health. The donor community consists of bilateral and multi-lateral agencies as well as non-governmental organisations, both domestic and international.

There are four modes of donor financing and pooling:

- Channelling of donor funds through the Ministry of Finance in the form of general budget support.
- Basket funding through the MOH which conducts harmonization of all donor support and aligns resources with priorities based on the national health strategy.
- Donors provide health sector-specific support and fund certain vertical programmes within the MOH system.
- Provide help directly to NGOs in the form of general budget support or aid (services, supplies, drugs, immunization and infrastructure)
- Work directly with districts/provinces, engaging the district medical officer and provincial medical officer respectively.
- Alternatively, some donors work indirectly with these ground units through sponsored NGOs.

Source: http://www.sundaynews.co.zw/zambia-urges-donors-to-stop-funding-health-sector-via-ngos/

Figure 14: Modes of donor financing
Donor trends and preferences:

- Donors with policies of **zero tolerance on corruption** could quickly withdraw support on signs of irregularities. In 2009, donor confidence was badly shaken when MOH officials in Lusaka were accused of stealing SEK7M in Swedish aid. [26] Support from the Swedes was withdrawn and only resumed in 2015. Currently, donors are slowly returning and **cautiously empowering the government** with management of their resources.

- Most donors are comfortable channelling aid through a **separate parallel system** (~60% of total donor funds). They prefer not to go directly through government, due to the perceived risks of inefficiency and accountability.

- With Zambia’s attainment of lower-middle income status in 2011 according to the World Bank, donors have started **shifting away to other countries with a greater level of poverty**. Some Scandinavian countries (e.g. Denmark) had already shifted their focus to other, lower income African countries. [27]

- Some donors deliver aid in forms that **support and stimulate their domestic economic activities**. For instance, the provision of drugs as part of aid to support local pharmaceutical companies.

- **Maternal and child health** programmes are gaining most traction in donor support currently. They are being supported by the World Bank (five provinces), Department for International Development (DFID) (Central and Western provinces) and Swedish International Development Cooperation Agency (SIDA) (Eastern and Southern provinces).

- Certain donors are **favouring the private sector** in Zambia instead of public organisations due to their preference for value creation activities (deemed greater in the private organisations). An example is the support of healthcare entrepreneurship by CARE International, working with Barclays and GlaxoSmithKline. [28]

**Private Insurance**

**Private Medical Insurance (PMI) penetration is very low.** In 2014, it accounted for only 1.6% of total health sector financing. [25] Only ~1.2% of adults in 2013 had private medical insurance. Group (corporate) health plans account for the vast majority (~90%) of PMI premiums in Zambia and employers (usually the MNCs and larger domestic ones) offer such benefits to remain competitive in the labour market.

Some non-government sources suggest that one reason for low private medical insurance coverage is the cultural norm among some companies to pay the medical bills of their employees. If this is a prevalent practice, employees would not have an incentive to purchase their own insurance. Further research is needed to determine the extent of such practices.

Insurers face the following challenges:

- Licensed medical insurers face **fierce competition** from unregulated and quasi-medical insurance schemes, specifically private hospital health plans and employer-based health funds.

- Some of the private insurers are **unprofitable** (e.g. Liberty Life Insurance suffered ~K40–60M loss in the preceding years). However, many persist. Although their corporate health plans are loss-making, they enable insurers to maintain contact and relationships with a large customer base. This in turn allows the insurers to market and sell other, more profitable financial products.
• **Technological gaps** exist, making it difficult for insurers to identify customers, pre-authorise medical expenses, track utilisation costs, detect fraud, and collect premiums from customers without bank accounts.

• **Lack of awareness** is the most significant barrier to insurance uptake. For instance, only 14.2% of Zambian adults are aware of insurance. [17] Insurers emphasise that education is key to insurance sector growth and healthcare cost containment.

Nevertheless, there is a **push by regulators and professional bodies towards micro-insurance** which could benefit private medical insurers. Examples of initiatives include: Insurers Association of Zambia (IAZ) launching its five-year strategy with the growth of micro-insurance as one of the key pillars and the Financial Services Deepening Zambia (FSDZ) relaunching the Microinsurance Acceleration Facility (MAF) supporting market players on innovative ideas for scale, value and sustainability. [29]

**Social Health Insurance**

The government is currently developing a SHI scheme, as part of the “National Social Protection Bill”. It is envisioned that SHI will serve as an alternative and additional source of revenue for financing, decreasing the out-of-pocket burden on the population. The following challenges were highlighted:

• Initially, the bulk of the population — the informal sector and their dependents will not be covered under the scheme as the SHI is designed to cover only employees of the formal sector, their spouse and up to four dependents. The full potential of revenue collection would be not realised due to the low level of wages of the formal workers and the exclusion of the informal sector.

• The SHI is framed as part of the larger “National Social Protection Bill” which could spell delay in implementation. Although legislative and administrative arrangements are now in progress for the establishment of SHI through an Act of Parliament, the implementation would only occur in 2017. The SHI scheme could be de-linked from the “National Social Protection Bill” to hasten implementation.

• **Lack of political will and support** — The SHI has been in the making since the 1990s and a detailed actuarial study was undertaken back in 2008 to assess the feasibility of such a scheme. However, it did not enjoy strong support, and there were different ideas on how the scheme should take shape. It is not helped by the fact that many Zambians view healthcare as the responsibility of the state and are reluctant to assume responsibility and any pre-payment.

• The success of SHI depends on the technical, management and operational capabilities of the government. The private sector could take on a larger role to co-manage the scheme besides providing complementary and/or supplementary coverage. However, it is early days, as private insurers have not yet been engaged by the government on SHI implementation or partnership opportunities.
Pooling and Purchasing

Pooling refers to the arrangement of accumulating revenues for health. It seeks to maximise the redistributive capacity of funds, which depends on the size and diversity of the pools. Purchasing is the process of allocating the prepaid resources from the pool to the providers in exchange for service benefits.

Referring to figure 13, approximately half of total health revenue funds are not pooled, while the largest pool of funds belongs to the MOH (combination of general taxation funds from the MOF as well as donors which contributed to the basket funding programme).

Pooling of government and donor funds had positive effects on financial protection and access to services. It allowed the removal of primary care user fees in rural areas in 2006, and led to greater health services utilisation. [31]

Donors have four main ways of pooling and disbursement of funds (see figure 14). The majority of donor funds (~60% of total donor revenue) are usually ring-fenced for specific intervention programmes, like maternal/child health, malaria or HIV/AIDS. Such funding may not properly align with the NHSP and cannot be flexibly deployed to medical emergencies. The MOH advocates the SWAp sector-wide approach - pooling of funds within the government for integration with wider-reaching programmes of care.

Limited pooling occurs through private insurance schemes as they account for only a small proportion of total health care revenues. OOP payments are also not pooled at all. Both private medical insurers and individual patients paying OOP reimburse providers on a fee-for-service basis.

Public Pooling and Purchasing

Budget planning is a bottom-up process starting with the districts which define types and range of services to provide. These services are translated into activities and the resources required. Budgets are then consolidated at the provincial level and finally nationally at the MOH.

Per capita funding allocated to the districts and provinces is derived from a deprivation formula. The formula is based on the Material Deprivation Index (MDI) which allocates more to the most deprived districts. It is also adjusted for population size and infrastructure/capital investment needs. However, the outdated and unsophisticated formula ignores key factors such as the size, density and terrain of a district, disadvantaging sparsely populated and inaccessible areas.

Standard bed/population ratios are applied uniformly to determine the number of hospital beds (1st, 2nd, and 3rd level) in each of the hospital nationwide. Hospitals are then reimbursed based on historical cost per bed day, relying heavily on historical (inflationary) adjustments. [32] Since hospitals are reimbursed on a flat rate per bed day, they are motivated to keep costs as low as possible to improve profit margins. This may result in inequitable resource distribution and service delivery.

All HR staff costs at various levels of the public health system are paid centrally.

Distribution and procurement/sourcing of drugs and medical supplies are handled by 2 separate agencies (the government medical distributor Medical Stores Limited (MSL) for the former and the MOH’s central procurement unit for the latter). The segregation leads to ineffective coordination and fragmented decision-making.
Case Study — Adverse Effects on Public Purchasing in 2005

Prior to 2005, purchasing in the public health sector was highly decentralised. It was characterised by both the devolution of management responsibilities from the MOH to CBOH and the “deconcentration” to the Ministry offices at the district level (District Health Management Teams (DHMTs)) and their local health boards (District Health Boards (DHBs)). [33] A leaner MOH retained the responsibility for allocating the public health budget, donors’ relationship management, policy making, and maintaining legislation.

The District Health Boards held funds and purchased primary care services at the district level and a semi-autonomous Central Board of Health (CBOH) did the same for secondary and tertiary services. The CBOH also established and enforced national standards and commissioned the delivery of services.

However, the repealing of the Health Services Act in 2005 resulted in reversion of the system to a centrally controlled governance structure. There were adverse effects on purchasing:

- **Loss of capacity in community mobilisation and engagement** in service delivery planning and implementation, because community structures (e.g. health boards) and their autonomous functions were abolished (MOH 2010 and 2012). The members of the boards used to be from the community and included tribal chiefs, religious leaders and business leaders.

- **Loss of a robust health management system** for governance, monitoring and quality control to hold the executive officers of all public facilities accountable for performance.

- **Removal of the provider – purchaser split** as the CBOH and its other boards (e.g. District Health Boards) no longer exists as the fund-holding agent and purchaser for services. Currently, the MOH assumes both the roles of provider and purchasers.
Healthcare Delivery

This section describes the key challenges Zambia face in service delivery, maintaining a well performing health workforce and ensuring affordable essential drugs and medical supplies. These components directly affect the attainment of a health system which provides affordable, quality and accessible care.

Service Delivery

Zambia has an echeloned referral system in which patients are supposed to be referred progressively from health posts as medically necessary. District hospitals play a key role between health posts, health centres and provincial (2nd level) and 3rd level hospitals. Interviews with stakeholders suggest that the coordination of care between the levels is poor. This is mainly due to lack of transportation assets, non-functional communications systems and shortage of medical supervision.

As a result of the HR and resource constraints at the lowest level of health facilities, patients with minor health conditions often go directly to district, provincial or 3rd level hospitals, resulting in increased caseloads in these hospitals. In the UTH, the nation’s largest tertiary hospital, resources have to be committed to the diagnosis and treatment of such patients. This reduces the resources available to the critically ill.

The MOH seeks to have at least one Level 3 hospital and at least two Level 2 hospitals per province. [34] Based on the 2012 list of health facilities in Zambia report, only 2 out of the ten provinces, namely the Copperbelt and Lusaka, have met the target.

The government pledged in 2012 to build 650 healthcare facilities nationwide to improve rural access to health facilities. This was funded through a US$ 50 MM credit line by India's EXIM Bank). However, the clinics which were to be constructed by the Indian firms faced repeated delays. In July 2014, Health Minister Dr Kasonde admitted that the government was concerned at the lack of progress. Most recently, the deadline of April 2016 was postponed to October 2016.

Zambia lacks a basic package of health services using public funding which it provides or aspires to provide to its citizens in an equitable manner. This package should be comprehensive and respond to the full range of health problems. It should also be cost effective and affordable to the government such that long term funding is sustainable. According to the 6th National Development Plan 2011–2015, the government was supposed to finalise and adopt a “Basic Health Care Package” by 2015. [35] However, to our knowledge, such a package has not been recognised officially or adopted as policy by Cabinet.

Politicians and senior office holders enjoy the privilege of medical treatment overseas which includes the cost of air tickets, accommodations, medical services and drugs and other facilitations.
Human Resource

The country suffers from a severe short supply of clinical health workers and inequities in distribution of human resources. Besides this, Zambia faces challenges in training and attracting clinical staff to work in rural areas, which severely hampers service delivery and the attainment of the national health priorities.

Shortages of HR

Number of Staff vs Approved/Required Manpower Establishment, 2010

<table>
<thead>
<tr>
<th>Staff category</th>
<th># of Staff Shortage</th>
<th>Establishment</th>
<th>Gap to Establishment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Officer</td>
<td>1,535</td>
<td>4,000</td>
<td>62%</td>
</tr>
<tr>
<td>Dentistry</td>
<td>257</td>
<td>633</td>
<td>59%</td>
</tr>
<tr>
<td>Doctors</td>
<td>911</td>
<td>2,391</td>
<td>62%</td>
</tr>
<tr>
<td>Nutrition</td>
<td>139</td>
<td>209</td>
<td>33%</td>
</tr>
<tr>
<td>Lab Services</td>
<td>639</td>
<td>1,560</td>
<td>59%</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>371</td>
<td>425</td>
<td>13%</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>239</td>
<td>300</td>
<td>20%</td>
</tr>
<tr>
<td>Radiography</td>
<td>259</td>
<td>233</td>
<td>-11%</td>
</tr>
<tr>
<td>Midwives</td>
<td>2,671</td>
<td>5,600</td>
<td>52%</td>
</tr>
<tr>
<td>Nurses</td>
<td>7,669</td>
<td>16,732</td>
<td>54%</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>1,203</td>
<td>1,640</td>
<td>27%</td>
</tr>
<tr>
<td>Other health workers</td>
<td>363</td>
<td>5,865</td>
<td>94%</td>
</tr>
<tr>
<td>Total Clinical</td>
<td>16,256</td>
<td>39,588</td>
<td>59%</td>
</tr>
<tr>
<td>Total Administration</td>
<td>14,457</td>
<td>12,054</td>
<td>-20%</td>
</tr>
<tr>
<td>Overall Total</td>
<td>30,713</td>
<td>51,642</td>
<td>41%</td>
</tr>
</tbody>
</table>

Source: Zambia National Human Resources for Health Strategic Plan 2011 – 2015

Figure 15: Shortages in clinical staff across all categories

There is a serious shortage of clinical staff in the public sector. In 2010, there was a gap of 59% when comparing the actual staffing level relative to the number of positions approved by the MOH. The shortages were across all clinical staff categories. The total number of clinical staff was 16,256, less than half the approved establishment figure of 39,588. Unlike clinical staff, there was an oversupply of administrative staff in 2010.
In fact, an MOH analysis in 2010 concluded that the public sector would face a shortage of about 13,000 healthcare workers by 2020. [36]

Figure 17: Trend of doctors and nurses/midwives densities
Although the number of physicians per 100,000 population increased from 14 in 2004 to 17 in 2012, Zambia is still short of physicians compared to the WHO’s recommended level of 100 physicians per 100,000 population. Moreover, nursing and midwifery personnel density (per 100,000 population) declined since 2004 (from 202 in 2004 to 76 in 2010). Similarly, Zambia does not meet WHO’s target level of 200 nurses and midwives per 100,000 population. [68]

In response to HR shortages, the MOH had developed the “National Training Operational Plan 2013-2016”. The focus of the plan was to involve the private sector to augment the national scale-up plan for healthcare workers in Zambia. The private-public partnership (PPP) has seen benefits. For example, Lusaka Apex Medical University, established in 2009, has an active student population of 8,000 currently and will contribute to the pipeline of healthcare workers. The government had also planned in its 2015 budget to increase medical staff by over 2,000. Collectively, these measures serve to alleviate the supply crunch, but actual staffing numbers will only gradually improve in the coming years.

**Case Study — Shortage of Physicians**

The shortage of physicians appeared in all geographical regions domestically and Zambia lags behind most global regions. Several reasons could have caused the lack of practicing physicians:

i. **Promotion or transfer of doctors to administrative/management** roles decreases the already low pool of practicing doctors who are delivering direct care.

ii. **NGOs draining** doctors away from the public system due to better remuneration, working conditions and overseas advancement prospects.

iii. **Moonlighting** of public doctors in private sector. It is allowed by the MOH as an avenue for its doctors to locum for additional income. Unfortunately, there are no established guidelines and doctors tend to misuse this benefit and spend more time in the private sector.
iv. Long bureaucratic employment procedures delay recruitment. Also, the central recruitment team at MOH has a relatively low capacity such that it is overwhelmed and cannot cope with actual demand.

Skills Gap
Besides physical shortages, there are also clinical skills gaps. As more referral hospitals (26 district hospitals in the pipeline) are established countrywide, existing and future clinical staffs need to be equipped with post-graduate qualifications to fill positions in the hospitals. Professionals also need to specialise in non-communicable diseases (NCDs) as the country copes with this rising burden. Neonatal and paediatric intensive care were also highlighted as areas of need.

Furthermore, at the provincial and district levels, administrators and managers need to be trained to manage human and financial resources efficiently and effectively. District and provincial medical officers had been attending courses at the National Institute of Public Administration but the programmes were discontinued. Logistical staff should also be recruited for these ground units to cope with medical supply chain challenges.

Rural-Urban Disparity

The shortages were not uniform across all provinces. Zambia suffers from inequitable distribution of health workers to the disadvantage of rural areas. For example, Lusaka had 166 clinical workers per 100,000 population but the Northern Province had just 68. Due to the severe shortage of qualified clinical staff in remote rural areas, some facilities are run by unqualified individuals or sole qualified practitioners. For instance, a single environmental officer helmed a health facility in Mukuni village near Livingstone before reinforcements arrived six months later.

Healthcare workers shun rural areas due to a host of problems: rural hardships allowance and/or salary not being paid on time or at all, insufficient staff housing near rural clinics, dilapidated clinics/facilities infrastructure, and inadequate power to run rural clinics and staff quarters.
Accessibility to health facilities remains an issue especially in rural areas — only 50% of households in rural areas live within 5km of a health facility (compared to 99% of households in urban areas). For example, the inhabitants of Katonte village in the Copperbelt province have to travel ~40km to the nearest health post, many by foot.

**Drugs and Medical Supplies**

Zambians are constantly frustrated by shortages of essential medicines in public health facilities especially in rural parts of the country. The public frequently reports stock-outs of basic drugs, like antibiotics and anti-malarial drugs. Certain facilities stock only paracetamol which is used indiscriminately to treat all diseases. In 2009, 30% of facilities reported stock-outs of drugs and 16% reported stock-outs of vaccines.

Zambians often pay for drugs OOP in public facilities which exacerbate the poverty situation in the country. The avoidable OOP payment is due to situations of stock-outs in the facilities as well as for payment of certain medicines not in the essential drug list.

Cost of drugs affects international institutions, including NGOs. Drug cost constitutes a large proportion of their cost base as such organisations are unable to buy drugs from the local pharmaceutical manufacturers which do not have WHO prequalification status.

According to Zambian Medicines Regulatory Authority (ZAMRA), illegal and unlicensed drug stores in the country are a significant problem. Many of these pharmacies lack the qualified personnel. The presence of poor quality or counterfeit drugs is greater in areas where drug shortages in public facilities are prevalent.

Besides occurrences of inadequacy of funds or drugs in the system, there are also teething supply chain challenges:

- **Warehousing and storage space are lacking.** For example, insufficient storage space in certain districts in Lusaka result in the ability to store only one months’ worth of drugs and supplies instead of the standard three months’ worth.

- **Transportation assets,** needed to move supplies as well as transport patients between points of care are also in shortage. Most provincial medical offices have only an ambulance each which can barely cope with the demands.

**Public-Private Partnership (PPP) Projects**

The private sector is forthcoming in partnering and augmenting the government. It participates in infrastructure development, service delivery and provision of drugs/medical supplies to complement the government’s efforts in the realisation of public health goals. In these cases of PPP, the private sector which performs these functions, may receive financial remuneration or goodwill from government. In addition, these private entities (especially corporations) often proactively commit their own resources to improve health outcomes of their labour force, and to further corporate social responsibility causes.

- In the Northern Coffee Corporation Ltd. (NCCL) plantation, the parent corporate, Olam International provides infrastructure support and operating expenses to run a rural health clinic with the government providing HR and basic medicines. This not only benefited the >2,000 plantation workers but indirectly helped the surrounding population (~5000 people). It was in the corporation’s interest to invest in the health facilities to ensure a
viable and healthy workforce. It also worked on other determinants of health (e.g. good quality water and sanitation) and ran HIV prevention and awareness campaign in Kasama, Northern Province where its coffee plantation was based.

- The Zambia Management and Leadership Academy is a MOH training initiative designed to improve leadership and management skills of healthcare professionals. The MOH partnered a private pharmaceutical company, Merck, through USAID for the funding and delivery of training programmes. A total of 1,260 administrators were trained by 2014 and the academy received US$ 8 MM in funding from USAID and Merck. [40]

- The Lancet Lab Lusaka, a private medical centre, offers public facilities and patients access to its advanced laboratory and diagnostic services (including usage of its MRI machine – one of few available nation-wide). The private medical centre is reimbursed by the government at a negotiated reduced rate. This private facility provides laboratory and diagnostics capability lacking in the public facilities and ensures affordable and high quality services to public patients.

- Novartis, a pharmaceutical company ran two initiatives addressing asthma and rheumatic heart disease. Zambia was the first recipient of its 'Power of One' global fundraising campaign in 2013. In 2014, Novartis delivered 2MM of its antimalarial treatment Coartem (1MM were publicly funded while the other 1MM was funded by Novartis). Its rheumatic heart disease initiative also saw Zambian healthcare professionals working alongside cardiologists and other specialists from the University of Cape Town and Massachusetts General Hospital. [41]

The government should continue to sustain existing PPP and work on developing new ones, leveraging on the resources, expertise and innovation capabilities of the private sector in areas of infrastructure development, service delivery and provision of drugs/medical supplies. Many of the corporations have defined corporate social responsibility roadmaps, and can commit sufficient resources in relevant areas of health.
Assessment

This section seeks to summarise the main challenges that may exist in the Zambian health system in relation to adequacy, efficiency and equity. It is not intended to be a comprehensive assessment due to the designs and constraints of the study. It is also not intended to reach conclusions about the overall performance of the system because there may be trade-offs between these goals that require careful consideration.

Adequacy

Zambia faces significant challenges on ensuring the adequacy and sustainability of finances. The MOH acknowledged in its latest mid-term report 2011-2014 that there is “low funding to the health sector in relation to allocations and needs”. As a result, the MOH imposed budget cuts at various levels in the latest 2016 financial year, with the provincial medical offices and hospitals being most affected. There were also reports of irregular disbursement of operational grants to its health facilities.

The overall level of funding allocated to health is insufficient to tackle the plethora of health challenges facing Zambia. As compared to peer countries, the country is not spending enough on health care (total and public expenditure) and OOP payments remain relatively high. The situation is worsened by the current economic plight and other competing national priorities. Other key challenges in adequacy include the heavy reliance on donor funding and the delay in implementation of the SHI scheme which does not cover all workers.

Efficiency

Given that financial and other resources (such as human resources) available for health services are extremely limited in Zambia, efficient use of these limited resources is critical. If each service provided uses the least possible amount of resources, without compromising quality, a wider range of services can be provided for a greater number of people and with greater cost coverage. This metric also takes into consideration the extent to which health system entitlements and decisions are transparent to the population and the existence of mechanisms for communities to hold health system managers to account.

The following challenges in efficiency were brought to attention during the study:

- **Leakages** are prevalent in the procurement and distribution system for drugs/medical supplies. In 2015, the MOH owed suppliers US$ 42M. Interviewees cited wastage occurring when drugs and supplies could not be delivered to health facilities due to insufficient storage space and supply chain coordination issues. In addition, corruption was reported as another form of leakage in this system. The misalignment of the procurement and distribution platforms also resulted in leakages.

- **Outdated resource allocation formulas** resulting in inefficient allocation.

- **Reversion to a centrally governed public pooling and purchasing system** leading to loss of capacity in community mobilisation and engagement, removal of the provider – purchaser split and the lack of a robust health management system which incorporates performance
assessment frameworks for governance, monitoring and quality control.

- Criticisms that the current health planning and budgeting process is **not dynamic and does not meet the changing needs**: For example, changes to annual allocations were applied uniformly across the board instead of adjusting where the most needs were, the lack of use of data analytics and the absence of zero-base budget planning.

**Equity**

All health systems should ensure the **equitable use of health services and access to needed care**. The burden of ill-health is most on poorer socio-economic groups within the country which tends to live in the rural areas. Therefore, it is assumed that the distribution of service use should be pro-poor if it is to be considered equitable. Unfortunately, the Zambian healthcare delivery system is challenged by an inequitable distribution of human resources and health facilities between urban and rural areas. There is an urban bias in resource distribution and hence low accessibility to needed care in the rural areas. In addition, allocation is not aligned with the size of the population in the region and the poorest class tends not to utilise their share of services.

- The allocation of funds to health centres is not aligned with the size of the population within the province. Areas like Lusaka and Luapala experienced disproportionately larger allocation of spending relative to their population sizes. [20]
- The **poorest quintile** utilised only 14% of referral hospital care and received the least funding (13%) from the government.

The proportion of government funding spent on health centres relative to population size, by province, 2010

![Figure 20: The proportion of government funding spent on health centres relative to population size, by province](image-url)

*Source: Chitah, Mphuka and Masiye (2010)*
Relative utilisation and government funding for referral hospital services by quintile in Zambia, 2010

Source: Zambia Ministry of Health, 2010

Figure 21: Relative utilisation and government funding for referral hospital services by quintile
Case Studies

South Africa

Profile of South Africa’s Health System
South Africa’s health system was notorious for being unequal and inequitable, perpetuated by institutionalized racial discrimination. Post-1994, the government endeavoured to create a one-health system to promote equal access to quality health regardless of race. However, it was only partially successful due to a two-class health system it created - a private fee-for-service dominant sector and a public sector supported by the government in which the “inverse care law” existed.

The National Health Insurance (NHI) scheme was initiated in 2012 to achieve universal health coverage to ensure equity and address the inequalities presented by the current two tiers health system. While it presented an ambitious plan to change the face of healthcare over a 14-years period, South Africa is making positive strides with a re-engineered Primary Healthcare System and by solving rural-urban disparities.

A Re-engineered Primary Healthcare (PHC) System
PHC is viewed as a gatekeeper of quality and cost. There are three key PHC initiatives which had been piloted since 2012 [44]:

- **School health services** are actively promoted. Helmed by a professional nurse, each team will provide a suite of health promotion, preventive and curative services which aim to meet the health needs of children in school. The focus is on health promotion.

- Creation of resilient **community-based health worker teams** which are responsible for promotive and preventive health for its ward (<5K population). Each team is headed by a health professional (usually a nurse) and its main objective is to garner community involvement for promotive and preventive health.

- **“District Clinical Specialist Team” (DCST)** - focusing on improving maternal and child health. Support is carried out at the district level by a composite team of specialists (O&G, paediatrician and anaesthetist), a family physician, a nurse and a midwife.

Bridging Rural-Urban Divide
To increase accessibility and quality of healthcare in rural areas vis-à-vis standards in urban areas, South Africa has done well to shore up shortages in rural healthcare staff and to raise the capabilities of administrators at the district levels:

- Improvement in rural staffing levels are due to:
  
  i. **Contracting of private sector GPs** to work in public clinics, especially in rural areas.
  ii. Making it **compulsory for healthcare graduates (doctors, nurses, etc.) to serve in rural areas** for a year during their formative professional years. It has a positive influence on young graduates to serve where there is pressing need and eventually a certain proportion will stay on in rural regions to work.
  iii. Implementation of a **rural allowance** for healthcare professionals (an additional 12-22%
fee on top of the base salary.

- **Improvement of the general level of administrative and managerial skills at district levels** for health facilities and HR managers.

**Rwanda**

**Profile of Rwanda’s Health System**

The civil war and genocide which ended in 1994 took the lives of ~1 MM people, leaving the country in a state of almost total collapse. However, Rwanda has emerged as one of few countries in sub-Saharan Africa that has made remarkable improvements in the health status of its population.

Rwanda has made laudable improvements on key health indicators like infant and child mortality, immunisation coverage, use of family planning, malaria mortality and morbidity and HIV prevalence. Improvements can be attributed to daring health reforms, including development of community health insurance and by leveraging on technology.

**Community-based Health Insurance**

“Of all countries in Africa, Rwanda is probably getting the closest to having health for all, health access for all,” said John Ruxin, founder of the Access Project, a Rwanda-run health programme. Community health insurance (mutuelles) has been key to risk pooling to remove financial barriers to health services and achieving universal health coverage (only 4% of the population remains uncovered in 2012). [45] Importantly, out-of-pocket expenses fall and more people can be treated without being pushed into poverty due to large medical bills.

- **Financing is progressive.** The premium of the poorest and most vulnerable group is fully subsidized by the Government and its development partners (~25% of Rwandans get free care) According to a three-tiered premium scaling system called Ubudehe, the wealthiest tier pays up to 3-4 times that of the lowest premium. Importantly, tiered financing introduced the principles of equity and inclusion. [46]

- The mutuelles contributed to a well-functioning national network of thousands of health workers, based at the community / village level. Rural health posts are stocked with basic equipment and essential drugs.

- The success of mutuelles is in part a result of government ability to enforce implementation. Rwanda’s leadership is committed to health development and in ensuring effective governance and accountability for implementing policies. [47]

**Leverage on Technology**

Besides rapidly pushing mobile phone ownership and internet coverage, Rwanda has set a strong focus on tangible benefits and deliverables for e-Health. It committed US$32 in 2009 e-Health and endorsed the National E-Health Strategic Plan (2009-2013) [48]. The key highlights of its technological success include:

- **TRACnet system** in Rwanda, which aggregates data on the care of patients infected with human immunodeficiency virus (HIV) from large numbers of clinics. A diseases surveillance
system was subsequently added to provide visibility on epidemics.

- Being selected as East Africa’s centre of excellence in e-health with a key role to drive e-health solutions like electronic storage of medical records.[49]
- Seeking global partners to build capacity in e-health. For example, signing an MoU with the Korean government for collaboration in the field of telemedicine, hospital information system (HIS) and provision of ICT-based medical services. [50]
- Establishment of the world’s first network of delivery drones for delivery of blood samples and medicines to rural areas (due for full implementation by 2020). [51]

Cuba

Profile of Cuba’s Health System

“Cuba has set an example in health standards for other countries to follow, and has been instrumental in its offering medical training for thousands of doctors and nurses-to-be worldwide.” — Dr. Margaret Chan, Director-General, WHO.

Despite very limited resources and years of economic sanctions by the U.S., the Cuban health system is lauded globally for its excellence and its efficiency. According to the World Bank, Cuba has lower infant mortality rates and slightly higher life expectancy despite spending only ~1/20 of what the US spends on healthcare. [52] Besides medical training, Cuba’s success is also due to their perseverance in prevention.

Focus on Preventive Care

Community Health Team — Cuba has one of the world’s highest doctor-to-patient ratios, about 77 physicians per 10,000 people. A team of doctor, nurses and health workers looks after ~200 families (or up to 1000 people) [53]. The care team and patients live in the same community and the former understands deeply not only the patients’ medical condition (categorised into 4 groups according to level of health risk) but also personal problems, social pressures and environmental issues in the community.

Community Outreach — Patients are visited annually while those with chronic conditions have more frequent interaction with the community health team. Members of this team actually take time to visit residents, promoting lifestyle changes, hygiene habits, healthy cooking, etc.

National Network of Polyclinics — This network is a pillar of Cuba’s health system. [54] Each polyclinic supports up to 40 family physician centres. Besides providing access to medical equipment found normally in hospitals, they are also official research and teaching facilities for medical professionals. Nevertheless, patients return to their community team for ongoing treatment.

Medical Training

Specialisation in Family Medicine — >97% of medical graduates specialises in family medicines (they spend one internship year and two residency year in family medicine) before application in a second specialty [55]. In addition, medical education emphasises the obligations and ethics of the profession whose objective is to provide “free and quality care” to ever citizen

Medical “Field Experience” — Cuba is committed to benefiting developing countries, especially those in crisis. Besides fulfilling the role of diplomacy, its health workers gain medical field
experience. Cuba has sent ~325,000 of its medical personnel (some of whom went on multiple missions) to 158 countries in the more than five decades. [56] Cuba sends more doctors to assist in developing countries than the entire G8 combined [57]

Financial Assistance — At the leading university, ELAM, medical education is largely free for locals as well as foreigners (almost 2000 students from developing countries benefit). Many are hesitant to study family medicine being the least lucrative of medical specialties and because of the debt they accumulate in medical school. However, these problems do not exist in Cuba.

Thailand

Profile of Thailand’s Health System
Thailand implemented the Universal Coverage Scheme (UCS) in 2002 for 48 million of its people who were neither private sector employees nor civil servants. Coupled with the Civil Servants Medical Benefit Scheme (CSMBS) and the Social Security Scheme (SSS), the country attained Universal Health Coverage (UHC). UCS is the largest and most pivotal scheme in the expansion of coverage to the poor and informal sector. Its success has been attributed to a sound system of strategic purchasing which delineates the purchaser and provider roles and reimbursement mechanisms which promotes cost-containment. [58]

Purchaser — Provider Split
An independent purchasing entity, the National Health Security Office (NHSO) was created and delinked from the Ministry of Public Health (MoPH). Prior to UCS, the MOPH channelled funds to its administrative tiers and service units (supply-side financing). [59] The NHSO now acts as the purchaser, entering into contracts with providers and allocating funds according to services rendered (demand-side financing). This separation added checks and balances into the system.

- The fund pool for inpatient care has been organized at the regional level and then funds pass directly from the NHSO to hospitals. [60]
- Funding for outpatient care is pooled by the contracted unit for primary care which comprises a district hospital and health centres responsible for ~50,000 people. [60]
- Funds for promotive and preventive health are directed to the four different levels of government and pooled for area-based activities at the Provincial Health Office. [60]

Efficient Provider Reimbursement
Previously, funding is prepaid to public providers based on its size, staff count and historical performance. The scheme today employs capitation and case-based payments with a global budget. Both worked efficiently by sending strong cost-containment incentives to the providers. [54] Other features include:

- **Flexibility** — the contract between NHSO and each facility network allows for some variation in conditions, according to local health needs. For example, the board could decide to direct funds to the community hospital or to particular interventions at specific health centres.
- It avoids under-treatment and under-referral of patients as a result of the cost-containment effect of the two payment mechanisms by introducing additional payments for
specific high-cost diseases or procedures.

- The NHSO provides additional financial incentives for reporting of utilisation data and other desired provider behaviours, such as quality improvement.

**Case Study — Community Involvement in Pradit-Thorakarn, Bangkok**

The Pradit-Thorakan community is a prime example of an engaged community providing support in health promotion, quality assurance and financial protection to its residents. Located in the Chatuchak district of Bangkok, Pradit-Thorakan has a population of 1,365 or 367 households.

- Financial Protection — There are two community funds in place to protect against economic hardships by risk-pooling of resources — a social savings group which provide financial assistance, e.g. funeral costs; and a community savings group which provides access to a revolving fund whereby members can borrow to service an existing loan, etc.

- Health Promotion — In partnership with the district health centre, a community health volunteer group builds capacity of its members to provide basic health care and carry out health promotion and prevention in the community.

- Quality Assurance — The community also plays a crucial role as the Chatuchak/Ladprao district coordinator for the NHSO, Thailand’s national health purchasing agency of the UCS. It is among 146 coordinating centres for the NHSO nationwide which increase awareness and build understanding of the UCS to local communities. Importantly, the community conducts monitoring and evaluation of services at the local level, and act as a neutral mediator/facilitator when a local complaint is lodged.

**Singapore**

**Profile of Singapore’s Health System**

“I don’t think there’s a single [healthcare] system in the world that spends as little as Singapore does in terms of percentage of GDP and gets the [health] outcomes that it gets.” – Dr Jim Yong Kim, President, World Bank.

With a relatively small proportion of its GDP, Singapore has established healthcare excellence, provided strong infrastructure and universal coverage for its people. Singapore’s health system gives emphasis to self-reliance, individual responsibility for one’s own health, and collective responsibility in maintaining healthcare affordability. [61]

**Self-Reliance**

Singapore’s health system was developed on a premise that the individual and not the state should be responsible to meet their own needs in healthcare. Dependency on government could lead to wastages and over-consumption. [62] The family would further augment self-reliance, by being care-givers in times of need, providing sources of income and even risk-pooling at the household level. The state’s role in healthcare is “the safety net of last resort”. Elements of self-reliance and family responsibility were designed in Medisave, an individual medical savings account:

- Personal responsibility — the employee contributes a percentage of salary to this account, with a matching contribution from the employer. This account belongs to the individual and accumulates over the lifetime. It is used under strict guidelines for inpatient treatment, day
surgery, certain outpatient care and for health insurance

- Family responsibility — patients can use the Medisave funds for immediate family members’ healthcare needs which enables income resourcing and risk-pooling at the household level. Funds can also be used to purchase health insurance for the individual and family members

**Cost Containment**
Singapore spends just 5.56% of GDP on healthcare in 2015. [63] The culture of limiting wastages, preventing over-utilisation and reducing leakages is deeply entrenched. Founding Prime Minister, Lee Kuan Yew had tasked his team then, to establish “good health services, with waste and costs kept in check by requiring co-payments from the user”. Cost containment in Singapore is achieved by keeping demand for services in check and by maximising potential for cost-savings:

- Curtailing Demand — co-payments, deductibles and restrictions on the use of Medisave for medical services are measures to discourage unnecessary doctor visits, tests, and treatments, resulting in more careful use of health system resources. [64]

- Efficient Provider Reimbursement — being the main provider of hospital care, the public hospitals are managed as corporate entities with a public service mission. They are reimbursed based on diagnosis-related groups and block budgets rather than on a fee-for-delivery model which minimises over-servicing and promotes efficiencies. [65]

- Price Transparency — Singapore promotes price and outcome transparency. The health ministry’s web portal updates hospital bills for procedures and ward classes. Patients can examine specific costs for surgeries, tests and peruse track record of each hospital, etc. Price transparency empowers consumers and increase competition to provide value.
Recommendations

Healthcare Financing Strategy

“People respond to incentives. The rest is commentary” opens Steven E. Landsburg’s wildly successful book, “The Armchair Economist”. In the health system, this translates to designing the financing system to drive appropriate healthcare delivery behaviours.

To support a health system with strengthened equity, efficiency, accessibility and sustainable financing, Zambia should develop a healthcare financing strategy aligned to these goals and congruent to the current stage of economic and healthcare developments.

Financial resources are limited and hence optimisation of scarce monies is essential and this can be achieved with a thoughtful and well-implemented national healthcare financing strategy. Policymakers can work with willing development partners (e.g. NGOs) and/or academia to develop this strategy drawing on the lessons of health systems the world over to articulate a cogent strategy appropriate for Zambia.

The strategy paper should outline issues and challenges in healthcare financing (some of which are highlighted in this report). Importantly, the strategy would also articulate objectives to generate sustainable and sufficient resources for health; improve equity in distribution of resources, utilisation and financing; and enhance efficiency in pooling and purchasing. From the challenges and objectives, relevant interventions/actions should then be proposed. In particular, the following strategic interventions could be considered:

- Improving sustainability of revenue through a plan to gradually lower dependency on donor funding, while reviewing donor relations with a view to promote SWAp and basket funding arrangements.

- Incorporating alternative and innovative revenue collection initiatives. For example, developing and implementing a “deferred saving scheme” for Zambians. Such a scheme would leverage on behavioural economics to increase saving for future curative and emergency healthcare needs.

- Gradually replacing donor funding with other domestic financing sources such as insurance and general taxation. In particular, the SHI scheme could promote universal coverage and strengthen social safety nets. Steps can be taken to expedite the approval of the SHI legislation in the Parliament and the subsequent implementation, with the intention to eventually include the informal sector in the scheme.

- Strengthening regulatory frameworks and functional interventions by the reintroduction of provider- purchaser split and a robust health management system for governance, monitoring and quality control.

- Enhance community engagement through introduction of progressive input and responsibilities of local leaders in the delivery of health services and budgetary allocations.

- Improve allocative efficiencies to the provinces, districts and hospitals. Interventions include
allocating resources on the basis of assessed need for health services (through a revised resource allocation framework) and strengthening the costing, budgeting, planning, monitoring and evaluation capacities at all levels of the health system.

We recommend that the MOH undertake a healthcare financing diagnostic exercise in collaboration with subject matter experts (e.g. from WHO, NGOs, consultants or academia). This will serve as the basis for the development of a national healthcare financing strategy.

During this exercise, the current state of Zambia’s healthcare financing system will be reviewed and assessed relative to the goal of UHC and financial sustainability. All stakeholders and development partners at the country and sub-national levels can be engaged to seek their views on implementing strategic actions. In addition, the exercise will provide detailed insights into where the current system is performing well or is facing challenges, why this is happening, and the obstacles Zambia faces in moving towards UHC. The strategy can then be contextualised into short- and medium-term plans and actions at the national, provincial, district and community levels.

**Expanded Role of Private Sector**

With an aligned financing model to drive efficiency, adequacy and equity at the macro and micro levels, the health system can expect changes in provider behaviour. A rapid ramp up in healthcare financing and delivery infrastructure is likely, given the current unmet needs. Therefore, there would be opportunities for the private sector (NGO and for-profit) to expand their presence, especially through innovative financing and care models. Particularly, the private sector can contribute and expand its influence in the following ways:

- Private providers (primary, secondary and tertiary) participation as part of provider network in the SHI scheme.
- Private payors complementing and/or supplementing the SHI to increase coverage of medical services and/or coverage of cost for the aspirational middle and wealthy class. During the design and implementation stages, the private sector can also contribute towards technical support of the SHI scheme.
- Collaboration with the government in areas of innovation, quality control, product development, education/awareness for win-win outcomes in health.
- PPP opportunities in infrastructure development, service delivery and provision of drugs/medical supplies to complement the government’s efforts in the realisation of public health goals.

Within the health financing strategy, the MOH should develop a concrete action plan for proactive engagement with the private sector. The plan should elaborate on opportunities and scope for private sector participation and provide safeguards through a legal and institutional framework.

Thereafter, to facilitate the expanded role of the private sector, the MOH can establish a framework that will allow it to actively recruit private providers into accredited public networks. This will expand service and population coverage for the delivery of healthcare.

Accreditation of private providers and establishment of the financing framework would be the foundation for contracting of essential healthcare packages under SHI.
Patients can leverage on the private sector’s skills, equipment and/or spare capacity, ameliorating issues of overcrowding and inadequacy in the public facilities.

It is critical that the move to contract services to the private sector should be supported by strong information systems, a functioning legal and governance framework to limit and sanction abuse, and transparent and accountable processes which are not vulnerable to leakages.

**Use of Telemedicine**

Telemedicine is defined as the delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies. [66] The Zambian health system is facing key issues in accessibility, equity, quality, and adequacy and can benefit by leveraging on modern information and communication technologies (ICTs), such as computers, the Internet, and cell phones.

Conditions in Zambia are ripe for telemedicine implementation:

- High mobile phones subscription and a reasonable level of internet penetration which are conducive for telemedicine initiatives Mobile phone penetration rate has reached 70% of the population with 10.8 M subscribers while there are about 4.9 M mobile internet users, representing 32% of the population. [67]

- The population density in Zambia is among the lowest in Sub-Saharan Africa, representing one of the most land abundant countries in the region such that the resolve to implement telemedicine to alleviate the lack of access to healthcare is high.

- Several examples of past and current telemedicine initiatives to tap on for lessons learnt and knowledge/capabilities transfer. These initiatives include the Virtual Doctors Programme, Zamtel telemedicine project funded by PEPFAR and the US DoD; and the women’s cancer screening programme.

Currently, the country lacks a national agency to coordinate telemedicine and eHealth initiatives nationally, ensuring that they are appropriate to local contexts, cost-effective, consistently evaluated, and adequately funded as part of integrated health service delivery. Stakeholders interviewed also highlighted challenges due to high costs, underdeveloped infrastructure, the lack of technical expertise, low will of leaders and inadequate resources to orient health workers as barriers to telemedicine in Zambia.

As a concrete next step, Zambia could establish a national-level body for eHealth and telemedicine initiatives, led by the MOH. This step is also recommended by the WHO as an instrument for implementing the World Health Assembly (WHA) eHealth resolution (WHA51.9).

The eventual executive arm of the agency could be an academic/scientific institution or a department within the MOH. The agency would establish a strategy for the development, implementation, and evaluation of telemedicine solutions.

Following this, the agency should conduct pilot trials of telemedicine initiatives, in certain geographical areas and segments of public healthcare. This will help to identify problems and build capacity prior to full scale implementation.
Successful pilots would be strong ‘proof-of-concept’ to strengthen stakeholder support throughout the healthcare system. International experience and expertise will help to catalyse adoption and scaling up.

**Conclusion**

Zambia has improved its healthcare coverage and outcomes over the last decades, but gaps remain in its financing and delivery systems. The three-pronged approach would strengthen the overall health system, improving adequacy, efficiency and equity. **While telemedicine can be initiated independently, the expanded role of the private sector should only follow after the development of the healthcare financing strategy.**

Deeper understanding of healthcare financing and incentive structures globally can bring useful lessons to benefit the development of a Zambian national healthcare financing strategy. Implementation of the strategy would then catalyse changes in care delivery and introduce innovative models with higher efficiency and accessibility. Eventually, the private sector should play an important role in healthcare financing and delivery, and this should be specifically provided for in the upcoming national strategies for healthcare.

Telemedicine is a significant enabler of affordable and accessible quality healthcare. Technological advances today allow widespread adoption of telemedicine to ameliorate some of the care delivery challenges Zambia faces as a relatively large country with a dispersed population.
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