Health Finance: A Review of National Health Insurance in Sub-Sharan Africa, A Case Study of Four Countries

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Health Finance: A Review of National Health Insurance in Sub Sharan Africa, A Case Study of Four Countries

A thesis submitted in partial fulfilment of the requirement for the degree of Master of Science in Public Health

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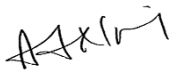
Declaration:

Where other people's work has been used, this has been carefully acknowledged and referenced in accordance with departmental requirements.

The thesis
Health Finance: A Review of National Health Insurance in Sub Sharan Africa, A Case Study of Four Countries,
is my own work.

Signature: 

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Dedication

This work is dedicated to my family in Sierra Leone

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List of Abbreviations

CBHI	Community-Based Health Insurance
CHE	Current Health Expenditure
CHF	Community Health Fund
CHI	Community Health Insurance
DAH	Developmental Assistance for Health
DALY	Disability Adjusted Life Years
DHS	Demographic Health Survey
DMHIS	District Medical Health Insurance Scheme
DOT	Direct Observe Therapy
FCAS	The fragile Conflict-Affected States
FDG	District Solidarity Fund
GDP	Gross Domestic Product
GGE	General Government Expenditure
GGHE	General Government Health Expenditure
HFS	Health Financing Scheme
HISP	Health Insurance Subsidy Program
KHHEUS	Kenya Household Health Expenditure and Utilisation Survey
LGA	Local Government agency
LMIC	Lower Middle-income countries
MBP	Minimum Basic Package
MHI	Mutual Health Insurance
MHO	Mutual Health Organisation
MOF	Ministry of Finance
MOH	Ministry of Health
NCD	Non-communicable diseases
NGF	National Guarantee Fund
NGO	Non-governmental organisation
NHI	National Health Insurance
NHIA	National Health Insurance Authorities
NHIF	National Health Insurance Fund
K-NHIF	Kenya National Health Insurance Fund
NHIS	National Health Insurance Scheme
NSSF	National Social Security Fund
ODA	Official developmental Assistance
OECD	The organisation of Economic Cooperation and Development
OOPP	Out of Pocket Payment
PCIS	Private Commercial Insurance scheme
PHC	Primary Health Care

PHI	Private Health Insurance
RAMA	La Rwandaise d'Assurance Maladie
RSSB	Rwanda Social Security Board
SDG	Sustainable Development Goal
SHI	Social Health Insurance
SHIB	Social Health Insurance Benefit
SNHI	Single National Health Insurance
SSA	Sub-Sahara Africa
SSNIT	Social Security and National Insurance Trust
TB	Tuberculosis
THE	Total Health Expenditure
UHC	Universal Health Coverage
UNDP	United Nation Development Program
USAID	Unites States Agency for international development
USD	United State Dollars
VAT	Value-added Tax
WHO	World Health Organisation

Abstract

The health sector in Sub-Sahara Africa remains underfunded, and these leaves people having to pay user fees out-of-pocket to access services. Many people unable to afford user-fees are deprived of access to affordable healthcare or risk been improvised from catastrophic expenditures. As a result, many countries have considered innovative policies to raise funds. Health insurance has been one such policy. However, many questions have been asked as to the feasibility of implementing insurance schemes in Africa, given the large informal sector, and what character should these schemes take to thrive in Africa.

In this paper, I conduct a literature review of National Health Insurance schemes in four sub-Saharan countries; Rwanda, Ghana, Kenya and Tanzania.

Findings include the existence of multiple Social Health Insurance (SHI), community-based health insurance (CBHI), private and other micro-insurance schemes, within countries. These schemes are increasingly modified to incorporate the informal sector and expand coverage. Basic Benefit packages covered were markedly different among the countries, ranging from an extensive package in Ghana, including about 95% of conditions in the country to more focused packages on primary care in Rwanda, Kenya and Tanzania. Packages were different between similar schemes within the same country. The cost of services covered fully for some groups or schemes, and for others, co-payments are required. Exemption and subsidisation of vulnerable groups are also done. Governance of SHI is central but diffuse and localised for CBHI, though these are being reviewed – with increase formalisation and nationalisation of schemes. NHI still only contribute a small proportion to the current health expenditure in all four countries.

In conclusion, NHI in Sub-Sahara Africa continues to evolve despite challenges in expanding coverage to the informal sector, the existence of multiple schemes and fragmentation, resulting in extensive administrative cost.

Recommendations based on findings are to promote the integration of schemes to enhance pooling, redistribution, risk sharing and equity by improving the legal framework, governance and administration of schemes, Implore strategies to identify and categorise the informal sector to avoid flat regressive premium and encourage enrolment.

Keywords: Ghana, Rwanda, Tanzania, Kenya, Health Insurance

1.0 Introduction

1.1 Introduction

As a young medical doctor practising in Sierra Leone, I have had the first-hand experience of the challenges in the healthcare system. One of the puzzling questions I have had in my mind is what better system or solutions that can be implemented to improve finical barrier to healthcare but also to have enough funds to be able to operate an efficient healthcare system. Having participated in the international course in health development, and been introduced to the concept of universal health coverage and health financing. I was further motivated to study the concept of national health insurance in Sub-Sahara Africa and learn from this having in mind my experiences of financial access to care in Sierra Leone.

Sub-Sahara African (SSA) countries continue to take actions on strengthening their health systems and more so to improve healthcare financing. Policymakers are looking for ways to mobilise and increase domestic revenue for health. As a result, many countries have turned to prepaid and contributory policy options such as health insurance schemes. National health insurance, or quasi-social health insurance schemes, community health insurance schemes are being developed across the region. Some countries in the SSA region are ahead in this process, and others are still in policy formation and initial stages, Sierra Leone being one. This study aims to describe the character- governance, coverages, differences and challenges of national health insurance schemes in four countries in Sub-Sahara Africa. Four countries Rwanda, Ghana. Kenya and Tanzania are examined as case studies. These countries have for almost 20 years or more actively involved in remodelling their health financing policies and could embody a wealth of experiences for Sierra Leone or countries considering implement health financing reforms.

1.2 Background

The United Nation's sustainable development (SDG) goals are a group of 17 goals 169 targets formed by world leaders in 2015, hoping to achieve these targets by 2030. Included in the vision of the SDG agenda, is that world leaders aspire for, “A world with equitable and universal access to quality education at all levels, to health care and social protection, where physical, mental and social wellbeing are assured." (1) The third SDG goal is on health, though all other goals can relate to health. The SDG 3 states "To ensure healthy lives and promote wellbeing for all at all ages". (2) It is further subdivided into sub-targets (goals within goals), and one of these is target 3.8, which specifically targets universal health coverage (UHC), which is defined below. (2) SDG 3.8 summaries the goals of UHC and furthers, state some indicators for monitoring these targets. These indicators include coverage and utilisation of essential services, the proportion of household with expenditure on health as part of their total household income. Nations should be able to improve on their health financing system to achieve these targets. Sub – Sahara Africa, like the rest of the world, is also aspiring to these goals and objectives.

Sub Saharan Africa (SSA) is the region south of the Sahara desert comprising of West, Central, Eastern, Southern and Horn of Africa. (3,4) It is home to about 1 billion of the world

population, a population that continues to increase at about 11 million annually. These growing numbers are as a result of changing childbearing and mortality patterns across the continent. The region is home to some of the most fragile countries in the world, with 34 out of the top 50 most fragile states, from SSA, according to 2019 world fragile index. (5) Fragile countries face an uphill task in achieving the UHC agenda. Fragile and conflict-affected states (FCAS) are more likely to suffer a deficit, including a deficiency in government's ability and wiliness to provide services, government ability to provide security and the legitimacy of the government. It is also important to note that within some countries some regions may be more stable than others and enjoy more services, security and stable governance. (6) Many countries in the region are recently emerging from conflicts and are still fragile, and fragility progress and regress pendulously. FCAS are characterised by a high burden of diseases, injuries from violence, re-surging infectious diseases and mental disorders. Apart from the health system and services delivery challenges, financing healthcare in FCAS is also quite a challenge. FCAS, are characterised by low economic growth, weak fiscal capacity, and high inflation, low tax to GDP ratio, huge government debt and dependence on external support, mostly directed towards humanitarian needs. (7)

Things are, however, changing with increasing population and level of skilful youth, rapidly growing economy, about 7% on average and a rising middle class, increase in political stability and democratisation of political processes. These changes are giving a new look and prospect to Africa. These improvements in the economy and other sector have also been accompanied with improved health indicators. (8) Morbidity and mortality levels are significantly reduced. Disability-adjusted life years from the top 10 causes of morbidity have more than halved between 2000 and 2015, driven due to reductions in malaria, HIV/AIDS and diarrheal diseases. The crude death rate from the top 10 causes of mortality fell, from 87.7 to 51.3 per 100 000 population in the same period. (9) Infant mortality in the 1990s was 107/1000 compared to 65/1000 in 2010 and 52 in 2018. (10) Life expectancy in 1950 was 36 years compared to 61 years now. (11)

Despite these gains, there are still challenges in the health sector, ranging from challenges with diseases such as HIV/AIDS, malaria, tuberculosis, challenges with system strengthening and healthcare financing. The region is coming from a very low base, with current levels lower than the rest of the world. The high burden of risk factors continue to prevent wellbeing from being assured, and the non-communicable diseases burden, still rising, may continue to rise to a level where improvements made could be eroded. (9)

To achieve the SDGs including the goals on UHC require mobilising additional finance, in particular domestic resources, to fund public services including health. (12) Since SDG 3.8 on UHC also intended to improve access to health service for all without facing financial hardship, nations must make an effort to mobilise domestic funds for health.

1.2.1 Situational analysis of health in Sub-Sahara Africa

Africa, and especially SSA, has over the past decades struggled with many challenges in the health sector. An HIV epidemic across the region, together with infectious diseases such as malaria, tuberculosis, and high maternal and child mortality, low life expectancies have been among the many issues characterising the continent's health sector. (8) Three causes of the top morbidity and mortality in the region are lower respiratory infections, HIV/AIDS and diarrheal disease. However, there are marked turn around, as health care overall continues to improve gradually. In terms of disability, the region has seen a marked reduction, with DALYs per 100,

000 people dropping to half for the top 10 causes of morbidity. Infectious disease like malaria (66% reduction), HIV (57.9% reduction) and diarrheal diseases (56.5% reduction) had the most significant reduction in morbidity. A decreasing trend observed with mortality in the region from 87.7 to 51.3 per 100, 000 population; with mortality in malaria (66%), HIV (57%) and diarrheal disease (52%). However, these decreases are very minimal for non-communicable conditions, and injuries were only about 1 to 3% reduction noticed in both morbidity and mortality. Maternal mortality between 1990 and 2010 decreased by 41%, and child mortality fell from 173 to 90 per 1000, between 1990 and 2012. Mortality continues to decrease, and the burden from HIV, malaria and tuberculosis sees a decline. Overall, all-cause mortality decreased by 37%, compared to 10% globally. (9)

Some concrete effort and partnership between local and external players have made progress happened, Introducing many interventions to improve the health status of people around the region. Improved access to antiretroviral, DOT programs, bed net access, and mass distribution of drugs targeting several infectious diseases are some notable interventions. The strengthening of integrated disease surveillance and strategies is picking up. (8)

Apart from the direct healthcare issues in the region, political instability, conflict, poverty, among many other factors has over time affected determinants of health. People's lifestyles, harmful cultural practices, lack of women and children empowerment, high illiteracy and economic hardship create difficult conditions in which people are born, grow, live and die. There is a high level of inequality and inequity in the region. These inequalities and inequities exist between countries, but also even within countries, as some are better off than others. The gap in life expectancy across the region, for example, is 22 years, though this improves from 27.5 between 2013 and 2018. (9) Lifestyle issues like smoking, reduce physical activity and unhealthy diet and alcohol intake continue to fuel disease burden. As a result, a new epidemic of non-communicable diseases (NCD) and injuries are emerging. There is a high probability of dying from NCD in the region than anywhere else in the world. (9)

Another challenge is the unavailability of services or access to these services—lack of essential needs for the general population and specific populations like the elderly. Financial, as well as geographical access to services, remain a challenge for many. At the same time, access to care and services are better-off for specific groups and specific diseases such as child and maternal care HIV, malaria. There are still challenges with service availability and access at a systemic level and across the life cycle – as different age groups have specific needs. For example, studies revealed services for adolescents and the elderly are the most unavailable, while the non-communicable diseases are still relatively neglected. Though countries have outlined essential packages, these are not often in line with population needs and situation of stock out are common. Health worker to patient ratio remains low across the region. The utilisation of the available services is low. The overall usage of services in the region is at 57%, with communicable (75%), and non-communicable (44%). Across groups, there are marked inequity on the utilisation of available services between countries and within countries, with low levels of health security (8,9)

1.3 Problem statement

After independence, most countries in the region have taxed based system of health financing, inherited from the colonial influence and offered health services with no user fees. (13) However, due to economic decline, counties started introducing user fees and cost recovery mechanism such as 'cash and carry' in the 1980s and early 1990s. The region reliance

on tax-funded healthcare has not been encouraging, as tax-base is quite small. Tax-to-GDP in the region compared to other regions like OECD and Latin America is far behind. The large informal economy has been attributed as one of the major cause of this, together with poor tax administration. The average tax-to-GDP ratio averages about 17.2% compared to 22.8% in Latin America and 34.2% in OECD. In 2017, Tax-to-GDP ratios in the region ranged from 5.7% in Nigeria to 31.5% in Seychelles, with nearly three-quarters of the countries falling between 11 and 22 per cent. (14) This result in a limited fiscal space for financing public services, including health. Due to low tax-to-GDP ratio, limited fiscal space, the regions' health sectors remain highly underfunded. (15) This is best expressed by considering the fact that 50% of the global disease burden and 37% of the world's population are in the regions of South Asia and Sub-Sahara Africa but together accounting for only 2% of global health spending. (15)

Limited tax coffer, shift the reliance on tax to user fees and donors. User fees introduction resulted in a high cost of out-of-pocket payments (OOPP), and reduce utilisation of services. In many low-middle-income countries (LMIC), OOPP expenditure is a significant source of healthcare financing. This can have a severe effect on household economic status, particularly among the poor. Often families are forced, to choose between purchasing healthcare and satisfying other basic needs such as education, food, and housing. As a result, health spending, especially catastrophic expenditure, can be an additional source of poverty. (16)

This problem of health financing in the developing world has resulted in many health programs been reliant on official developmental assistance (ODA). Development Assistance for Health has been a significant contributor to the scaling up of health responses across the African continent. However, ODA growth in recent years is declining, and this poses a risk to the sustainability of health programs and health care in the region. From 1990 to 2000 DAH grew by 4.9% annually, but since 2010 growth has been 1.2%. (15)

As countries pace towards the UHC, they face many challenges as healthcare demands and needs are changing. The cost of health around the world continues to rise as new technologies and interventions combined with an increasing life expectancy and population ageing. All these factors are increasing the cost of healthcare when most of the world is yet to achieve universal coverage. LMIC is no exception to these challenges, and perhaps far more affected. (17) OOPP is a major barrier to accessing essential services, as utilisation depends on a person's having the required funds to use needed services. Most citizens within SSA cannot afford to have healthcare without the risk of going into impoverishment. As the finical risk protection is low compared to other regions. (9) The lack of pre-finance coverage gap in sub-Saharan Africa is about 80% of the population. (18)

In the context of decreasing ODA, there is a need for new resources to be generated domestically. Efficient and more effective use of resources can help to achieve this, but health in Africa has been underfunded for too long and will not be improved through this means alone. Macroeconomic growth offers a further avenue for new revenue collection, through general taxation and a variety of innovative financing mechanisms. Thus the need for innovative financing mechanisms for health to complement existing domestic funding in bridging the resource gap. (15)

As a result, countries in SSA have considered the option to introduce health insurance schemes to address this challenge, expecting it will be an added source of funding. Some countries are ahead of others in how far they have introduced health insurance. Countries like Rwanda, Tanzania, Kenya and Ghana have had insurance schemes ongoing for almost 20 years or more. While Sierra Leone and Uganda passed a bill but are yet to roll it out. (19)

However, the feasibility of health insurance in Africa and developing countries is being questioned. Wagstaff argues that SHI may not necessarily deliver in LMIC as it was in developed countries. As a result of several challenges, among them being; poor regulation of SHI purchasers, non-enrollment and evasion by the formal sector, exclusion of the non-poor informal sector workers, negative labour market effects and so on. While, De Allegri et al., revealed that major operational challenges might impede the progress of CBHI in SSA. These challenges; lack of clear legislative and regulatory framework, low enrolment rates, insufficient risk management measures, weak managerial capacity, and high overhead costs, may affect the impact of CHBI as a strategy to achieve UHC.

Sub-Sahara Africa faces a double burden of diseases, macroeconomic challenges, low tax revenue, high OOPP, dwindling foreign aid, and limited fiscal space for health amidst conflict and socio-political instability. All these pose an enormous risk to SSA towards achieving UHC targets. The resulting underfunding from these challenges are influencing many countries to turn to health insurance. With some states having implemented health insurance, what are the characteristic differences and possible challenges of NHI in SSA?

1.4 Justification

The continued rising cost of healthcare amid limited fiscal space for health is proven costly and raising questions as to the capacity for countries to reach their SDG 3.8 - UHC targets by 2030. Therefore, several calls have been made across the continent by experts for the region to make radical policies towards health financing, if it is to strengthen it heath system and eliminate scourge like HIV, TB and Malaria. The African Union in its catalytic framework called on government across the region to move towards introducing new polices and innovate way to expand the fiscal space for health. (15) Increase in investment health will improve health status and also increases economic output. It is reported that economies grow by 0.4%, for every ten years gained in life expectancy. (8)

In this direction, many countries have turned towards introducing health insurance schemes with the expectation of it been a source of added income, despite calls for cautions by various experts. Countries in the region are initiating and expanding on current health insurance coverages as a move towards universal health insurance coverage. This is seen as an effective way to shield the population from the impoverishing effects of OOPP. (16) Health insurance increases protection against the detrimental effects of user fees and promotes an avenue towards universal healthcare coverage. (20)

While many countries are already on this path with quite a number operating health insurance schemes and a lot more in the early stages. Researchers and experts have asked for caution to maintain and have called for more studies and discussions on the policy in Africa and the developing world. (21)

This paper, through a case study, hopes to review four countries who for almost 20 years or more have been implementing health insurance. As it is recommended for other countries, like Sierra Leone, yet to implement health insurance, to draw up form proven experiences and outcomes from other countries in the region. (22)

1.5 Objectives

1.5.1 Overall aim:

This study aims to describe the characteristic differences and challenges of national insurance schemes in SSA, using four countries as case studies.

1.5.2 Research questions

1. What are the characteristic differences in NHI schemes between the four countries?
2. What are the challenges experienced by the countries in implementing NHI schemes?
3. What proportion of the Current Health Expenditure is NHI?
4. What are the recommendations from the study?

1.5.3 Research objectives

1. To analyse the differences in characteristics of NHI schemes between the four countries: formation and governance, population coverage, services covered (benefit packages), cost coverage (contributions arrangements).
2. Discuss the challenges of NHI encountered in these countries.
3. Discuss the contribution of NHI to current health expenditure.
4. Briefly discuss recommendations from the review.

2.0 Theory and principles

2.1 Universal Health Coverage

Universal Health Coverage (UHC) means people should have the health services they need, which includes, the designing of public health services, prevention, treatment, rehabilitation and palliative care at sufficient quality and effectiveness while ensuring that users do not experience financial hardship from using these services. (23) UHC simple means that everyone can use effective health services when they need them without facing financial hardship. (24). It is important that we define the dimension and context of terms in UHC, universality (all individual within the borders of a state—citizens and non-citizens), health (highest standard of physical, mental and social health—inclusive of health determinants) and coverage (to have access and be able to use services). (24) The UHC cube, **Figure 2.** Describes the dimensions to consider when moving towards universal coverage in a country's UHC policies. Its three dimensions shows; who is covered (population coverage), what is covered (service coverage) and at what cost (cost coverage).

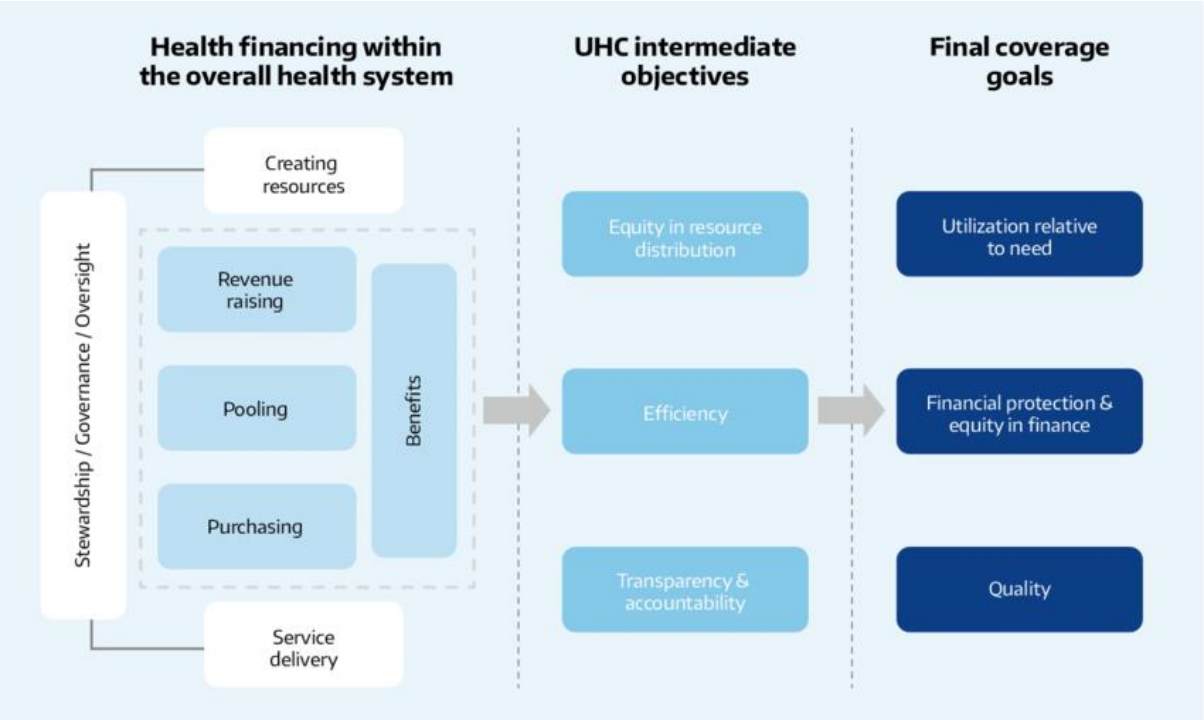


Figure 1. UHC goals and immediate objective, influenced by health financing policy. It illustrates the relations between health financing, UHC and the health system building blocks.

2.2 Universal Health Coverage functions

Health system financing for UHC has three principal functions which are revenue collection, pooling and purchasing, as depicted in **Figure 1.** Revenue generation or collection refers to the process by which money goes into the health system from government enterprises, households and other organisations including donation. The first principle for revenue collection is the method of funding –and its sustainability. The method should have solidarity

and progressivity – ability to pay. Flat-rate contributions are regressive and can affect coverage of vulnerable income groups. (22)

The function of pooling deals with the accumulation and management of funds, such that individual doesn't have to pay for accessing healthcare directly or by themselves entirely. It closely related to revenue generation and critical issues that need addressing include; risk composition, fragmentation, risk pooling and risk equalisation mechanisms. (22)

The last function of a health financing system is the process by which revenue collected and pooled is used to pay for services and interventions offered by providers. It can either be passive or strategic. Passive purchasing is paying bills when presented with them or following a predetermined budget. Strategic purchasing is a systematic and consistent process, buying the best services and providers. Issues encountered in purchasing include, defining a basic package, provider-payment mechanism, organisation of services and administrative efficiency. (22)

2.3 Health Financing Schemes

Health care financing schemes (HFS) as they are more properly called are the financing arrangement through which people get health care. They are a structural component of health financing systems. They include third-party financing arrangements or direct payment by households for goods and services. Third-party financing arrangement is a distinct body of rules that govern mode of participation in health financing schemes, the criterion for entitlement and the raising and pooling of funds for the scheme. (25) Key principles for a scheme are coverage and risk protections, who contributes and who benefits, and how well does a scheme prevent its contributors from catastrophic expenditure—that is how much of the cost does it cover. (22) Example of HFS are as follows

2.3.1 Government (Tax-based)

Taxed-based health financing, which is the use of general government revenue to pay for health services, came to practice in the mid-20th century as a national strategy. Before then, OOPP, private philanthropist, mutual organisation and social insurance were alternatives. This form of financing came into existence through two observed patterns. Some counties like great Britain and in Western Europe switched from social or national insurance schemes based on payroll to tax-based and for some other countries mostly those colonised or influenced by Britain inherited a taxed based system around their independence. Taxed based can be from general income tax or other government revenues, or earmark for health, as sin taxes or value-added taxes (VAT). One advantage of tax-based is that it can have wide coverage and a wide range of services. Where transparency and accountability are good, it benefits from better economic administration, risk management and purchasing power, enhanced by the political processes and decision making over funds. It also avoids challenges faced by voluntary schemes in getting members as payment is mandatory. However, the same political process can contribute to the disadvantage, where it can impede or reduce allocation for health or certain programs and used only for the specific purpose(s) or group(s). (13)

2.3.2 Social Health Insurance and National Health Insurance

Health care financing scheme (HFS) in which members got an entitlement to health care from salaried related contribution. So the primary feature of SHI is that contributions are salaried- related and often mandatory, levied on formal sector workers. In most cases now, it varies from country to country by either making different arrangements for people outside the formal sector or has different entitlement from those in the SHI and those not in the SHI. With such modification to include both formal and informal sector, they take a national outlook - National health insurance schemes (NHI). NHI often mandatory and may have features of SHI and with elements of other HFS. SHI schemes have more solidarity and also a willingness to pay as people can link contributions to benefit directly. Revenues for SHI, unlike tax-based, are not affected much by negotiation and political influence from other sectors. However, SHI usually is not as broad-based as tax-based insurance; they may also not result in insufficient income as typically perceived. (26)

2.3.3 Community-based health insurance

Community Health insurance (CHI) or community-based health insurance (CBHI) by definition "covers a wide variety of health insurance arrangements, each in its distinctive setting and each designed for distinct population groups." (18) The five common characteristics of CHBI include solidarity, community-based social dynamics, voluntary, participatory in decision-making and management and non-profit. It is important to note; not all CBHI schemes embodied these characteristics.

2.3.4 Others (Private Health Insurance, Out-of-pocket payment, Donor and Innovate Health financing)

Apart from the major schemes above, there are other ways people's gain access to healthcare, either through private health insurance, innovative or other micro health insurance schemes and donor-funded programs. One of the most important is out of pocket-payment. Out-of-pocket payment is the most common way to pay for finance health care bills around the world. Especially many LMIC that are yet to attaint substantial coverage of their population under pre-finance schemes. OOPP leads to catastrophic health expenditure. Catastrophic health expenditures refer to spending on health over a certain threshold, resulting in financial distress to a proportion of households and may cause impoverishment. It does not mean cost have to be high, as even health expenditures that seem small and can be financially disastrous for poor households. OOPP spending on healthcare has become a policy concern for three reasons; it leads to poverty, reduce spending on other household essentials, and household may forgo seeking healthcare.

3.0 Method

3.1 Methods and literature search

This research paper is a descriptive literature review. A literature search conducted purposefully on Vrije University Library, Google Scholar, and PubMed database. Targeted search at agencies and institutional archives and websites. Peer-reviewed papers, official documents and publications were obtained from the search. These documents included grey literature from the ministry of health archives and websites and other national agency relevance to the topic. Publications from the World Health Organisation, World Bank, were also included. Snowballing from in-text citation and references from the selected pair-reviewed publications and grey literature. Inclusion criteria were literature published in English and published between the years 2000, up to 2020. The only exception to this were papers found to be very relevant to the topic. This focus of the paper and search was on the health financing building block according to the WHO health system building blocks of the, focusing on national health insurance and revenue sources. Excluding publication on other health system building blocks, except where there is a clear link with health insurance. A search was commenced using a combination of keywords. After the search, a process of narrowing down the papers was commenced. Papers with title relevant to the objectives of this paper were selected initially. The second step was reading of abstracts and selection of relevant papers. These selected papers were read through, and those found to be relevant to the study were cited. This process is illustrated via a search tree in Annexe II. In narrowing down, the analysis was based on relevance, currency, reliability authority, provenance and objectivity of the material. Data extraction was done using an excel form with columns and rows made for different countries with headings from the framework and objectives.

The limitation included limited recent publications on national health insurance in the region, old numerical publications in some instances like those from statistics and demographic health survey were a couple of years early. These studies are essential to obtaining data on some indicators. Papers published in other languages like French, Swahili were not included.

Keywords that used include; Sub Saharan Africa, Ghana, Rwanda, Tanzania, and Kenya, health insurance, social health insurance, national health insurance, universal health coverage, health financing. In the following combination.

3.2 Analytic framework

To analyse and present the findings better, I selected an analytical framework. The framework selected is the universal health coverage cube diagram, **Figure 2**. The cube diagram comprises two cubes, a larger cube which is a representation of the total health expenditure (THE), and a smaller blue cube inside, which represents the amount of pooled public funds for health. Three dimensions define the cube. (27) Theses 3 dimensions illustrate the coverage dimension in analysing financial policy options for universal health coverage. In order words, it is an analytical guide towards understanding the policy options in the path towards UHC for a specific context. These three dimensions are population coverage (who's covered), services coverage (which services covered) and direct costs coverage of services (proportion of the cost

covered). The cubes illustrate the gap between national coverages and the UHC policy targets—the gap between available public resources and the required THE. The cube is an important advocacy tool in the path to UHC.

However, Roberts et al. questioned the limitations of the cube around the depth of analysis permissible under the dimensions of the cube and that the cube only illustrates averages. They suggested a disaggregation of the cube. **Figure 3** (28) They argued that population coverage, for example, can be disaggregated into income groups and where insurance status is available to insurance schemes. They went on further to suggest that for low-income countries disaggregating the population into income groups is of preference. They suggested for services coverage to be disaggregated into prevention, primary, secondary and tertiary care and for the cost axis to determine for each population and services covered. To better analyse coverages in details and bring out the equity gaps between the different subpopulation, we need to disaggregate the axis further. They believed disaggregating the cube brings out clear disparities on equity in the various dimensions.

In this paper, I have presented the findings based on health financing scheme along the three dimensions. The paper mentions the potential sources of funding that can contribute to the cube while looking at their population converges, services and proportion of cost covered. Also, given the relevance of governance and administration (stewardship) of the schemes, I found it important to include this in the findings and later, an overview of the national health account done to see how the various schemes pool or contribute to the two cubes.

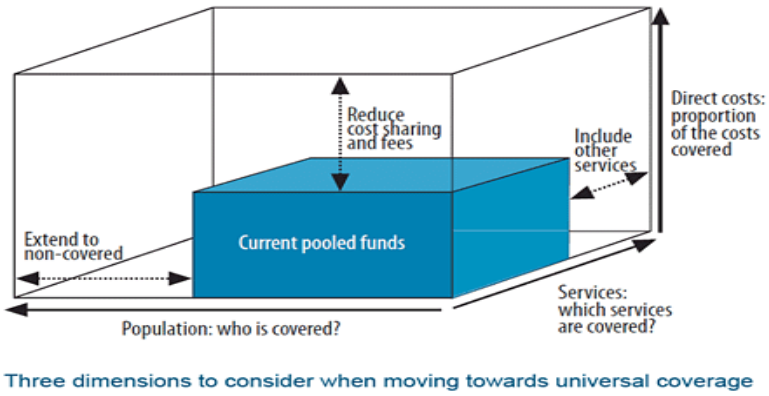


Figure 2. The Universal Health Coverage Cube

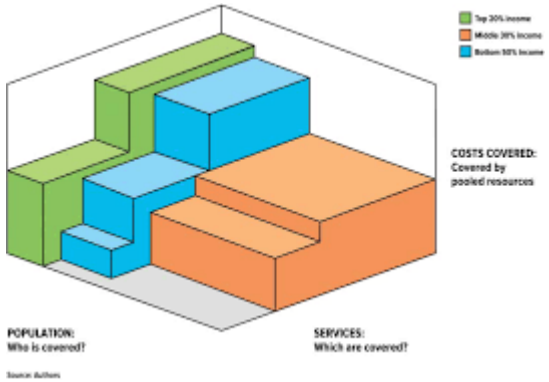


Figure 3. M J Roberts et al. "disaggregating the universal coverage cube, putting equity in the picture" (28)

4.0 Findings

Kenya and the United Republic of Tanzania are on the coast of East Africa and Ghana on the West African coat while Rwanda is a small landlocked country in Central Africa. Tanzania has a mainland and group of islands, the largest of these been Zanzibar. All four countries are members of the British Commonwealth. Their respect populations are illustrated in **Table 1.** (29)

These countries are all low-middle-income countries with considerable proportions of their population in poverty. According to the united nation development program multidimensional poverty index, about 54% of the populations in Rwanda and Tanzania are in multidimensional poverty, while it is in Kenya (38%) Ghana (30%), and between 22 to 34 per cent in each country classified as vulnerable to multidimensional poverty. (30) Agriculture is the major contributor to the economy in these countries, though the service industry has also grown significantly, especially in technology and tourism.

Rwanda had a long period of civil unrest since the 1950s up to the 1990s, with a rising tension that leads to the tragic genocide in 1994 between the Hutu and Tutsis and over 1 million people dead. (31) However, these countries have been relatively stable since and doing well economically in the sub-region. Kenya and many other countries in the region face significant gender disparities. These inequalities reflect the challenges women face in accessing adequate healthcare, education, finance and other social opportunities. (32)

Health financing schemes in the four countries were quite heterogeneous, with an array of health financing arrangements and schemes. In Rwanda, health sector funding flows from a diverse arrangement, including funds from; tax and government's budgetary allocations, insurance premiums and copayments, donations from local and external sources, as well as OOPP. (33) The other three countries had similar sources of funds, except Ghana, where a proportion of value-added tax (VAT) are specifically earmarked for health, and this makes a significant proportion of health funds. (34–36) These financing schemes all have similarities and differences in terms of their formation, organisation, and entitlement to coverage benefits package and proportion of cost covered. **Table. 1,** demonstrate a summary of the main result findings in the review.

4.1 Social and National Health Insurance schemes

4.1.1 Formation and governance

Social or national health insurance schemes were found in all four countries, since the 1960s in Kenya, (37) 1999 in Tanzania (38) and Rwanda in 2001. (39) Ghana also started the NHIS in 2003, which has a CBHI component. The scheme came into existence after the National Health Insurance Act 650 was passed in 2003. This made way for the set-up of the Nation health insurance authority (NHIA). (40) This act made an improved legal framework for the few exiting districts mutual health insurance schemes (DMHIS) at the time and mandated the formation of DMHIS by local government in all districts. The act gives NHIA the authority to manage the NHIS, which was a combination of SHI component for the formal sector and the DMHISs at districts and community level for the informal sector. Formation and regulation of DHMIS were devolved to the LGA. However, this system of DMHIS resulted in

fragmented schemes, which brought about challenges, including administrative challenges in managing the NHIS.

As a result, a new act passed in 2012 paved the way for the formation of the unitary NHIS replacing the multiple DMHIS and giving the NHIA more regulatory authorities at the district level, and NHIS district office branches were established. The NHIA is responsible for registration, licensing and regulation of all health insurance schemes in the country. It is also responsible for the national health insurance fund. (40–42). The evolution of governance was observed in all four countries. In Kenya, the National Hospital Insurance Fund (K-NHIF) was established mainly on the principle of SHI for government employees (37) The K-NHIF started as a department under the ministry of health, however, in 1998 major reformation saw it transformed into state cooperation. Over the years the NHIF, apart from operating a main general scheme (Supacover) has overseen seen the establishment of several other schemes which are all under its management. These include; the national health insurance subsidy program (HISP), started in 2004, the Linda mama Program, the secondary school cover, civil servant, disciplined service scheme and country public servant schemes. These schemes, like the civil servant scheme, have their unique packages and funds apart from the NHIF funds. (19,37) Tanzania, 1999 established the –National Health Insurance Fund (NHIF) under act number 8. (38) The scheme is managed by a board of directors but operates under the ministry of health, community development, gender, elderly and children. Also, separate from this is the scheme for employees under the National Social Security Fund who are covered by the Social Security Insurance Benefit (NSSF/SHIB). However, concerns over this fragmentation in governance and operation with the other schemes in the country has led to the proposal of a Single National Health Insurance (SNHI) scheme, which the government is trying to implement, intending to combine the NHIF, SHIB, and the community health funds(CHF) (38,43,44). Rwanda has two notable SHI, the La Rwandaise d'Assurance Maladie (RAMA) which was initially under the ministry of health, but since 2009 was merged with the Rwanda Social Security Board RSSB based on a Social Security Policy (SSP) recommendation and the MMI managed by the ministry of defence for military personnel. The National University of Rwanda is also noted to have a very small scheme for staff and students. (39)

4.1.2 Population coverage

Except for Ghana, the schemes in Kenya, Tanzania and Rwanda were started only for government workers but were later modified to include the informal sector and or the private sector. In Ghana, the NHIS since inception was designed to target all residents and its mandatory. All members, from the formal and informal sector, are required to register and pay a premium. Two-thirds of those covered are in the premium exempted categories and do not contribute. These groups include; children under age 18 if both parent are paid up (40 – 46 %), indigent (poor and vulnerable), elderly over 70 years and pensioners of SSNIT, pregnant women (9 %- 8.5%) and persons of mental illness who were recently added. The military and Police are also exempted from the scheme. (45,46) In Kenya and Tanzania, the K-NHIF and NHIF are mandatory to formal sector employees only and voluntary to the informal sector for Kenya. In Tanzania, the NHIF coverage is compulsory for public servants and their dependents (spouse plus up to 4 legal children), however, over the years it has been extended to include other groups like councillors, private companies employees, education intuitions, private individuals, children under 11, farmers in cooperatives, and organised socioeconomic groups like the Machinga and Bodaboda, drivers groups.

Countries	**Rwanda**		**Ghana**	**Kenya**	**Tanzania**	
Health Insurance Schemes	**RAMA MMI**	**MHI**	**NHIS DHMIS(2003-12)**	**K-NHIF[1]**	**NHIF SHIB/NSSF**	**CHF (rural) TIKA (urban)**
National Population (millions)	12.4		28.2	47.6	56.7	
Established (Year)	2001	1999	2003	1963	1999/2006	2001
Governance Regulation Authority	RSSB	RSSB/ MOH/ COM	NHIA	NHIF Board	Board of Director/ MOH	MOH/ LGA/ COM/ HC
Model of Health Insurance	SHI	CHBI	SHI + CHBI	SHI	SHI	CHBI
Target Population	Formal - Public private workers MMI (Military)	Informal sector Private formal sector	Formal Informal Public private	Formal Informal Public private	Formal public private	Informal sector
Exempted groups	-	lower two wealth categories of the Udebuehe	<18yrs, >70yrs, Pensioners, pregnant groups, mentally ill, military & Police indigenes	HISP	children under 11	As decided by ward committee or minister of health
Coverage of Total Insurance	2%	97%	38.4%	22%	5% (2013) 9% (2019)	8%
Total HI coverage of Population	79%		38.4%	19%	16%(2013)	
Benefit Package	Comprehensive list of curative and PHC services	PHC and some curative care	95% of services and conditions in Ghana	Inpatient outpatient services	Open list, but needs approval for specialist care	PHC services
Premium	Employee + employer	Household	Employee + employer Self-employed	Employee	Employee + employer	Member + Marching fund from Gov.
co-payments	15%	Yes 5 – 10 %	No	No	Pay excess cost not covered by insurance	No
Subsidy	No	Yes	Yes	Yes - HISP	Yes	Gov. Matching funds
Number of Risk Pool or schemes)	2	Multiple within district	1 (since 2012)	1	2	Multiple
Other funding Sources	Gov. budget allocation	Gov. budget allocation	VAT, levy, Gov. budget allocation	Gov. & county allocations	Gov. budget allocation	Gov. Marching funds
NHI of CHE (%)	17		10	8	8	
Other Insurance	Private health insurance, Micro health Insurance Schemes					

Table 1. Summary of Health Insurance Financing Scheme the four countries and their features. 1. Kenya NHIF, to distinguish it from Tanzania. MOH - Ministry of health, COM - Community, LGA - Local government authority. HC – Health Centres, PHC – primary health care

The NHIF also operates the Bunge health insurance scheme and covers the Zanzibar House of Representatives. (43,44). It excludes those covered by the NSSF/SHIB. The SHIB which started operations in 2006 covers employees of the NSSF, their spouse and up to four biological or adopted children below the age of 18 or 21 if in full-time education. (47) Only about 9.2% of NSSF beneficiaries are registered with the scheme. Coverage starts three months after contributions and ends three months after retirement if they stop contributing at retirement. (47,48) A similar trend was seen in Rwanda were the RAMA was initial a scheme for civil servants and employees of government agencies, it however with recent reforms extended its coverage to include private sector employee. The MMI covers member of the military. (49)

The extension of an SHI scheme to improve coverage among the informal sector requires a system of categorising people in this sector. This system of categorisation exists across the four countries, at different degrees of development. These categorisations of the informal sector into income groups and level of wealth quartile is useful for scaling premiums according to level as opposed to a flat rate. The Rwanda Udebuehe classification is used to categorise the informal sector into different income groups and premiums. Though it is mostly utilised by Mutual Health insurance (MHI) schemes, Ghana has a categorisation system defined in the national health insurance policy framework. (45) Kenya has a flat rate for the informal sectors and the formal sector a scaled premium according to income groups. For those covered by the HISP, identification is done through the Labour ministry. (50)

Coverage of the NHIS since the inception in 2004, rose gradually, peaking in 2008 at 62% of the target population. For ages 15 – 49 years, women (62%) were more covered than Men (48%) This is also consistent with the 2014 Ghana DHS survey. However, coverage has been reported to decline, and this is so as many beneficiaries are not aware and fail to register, high attrition from the informal sector since they are required to pay up premiums. (41,51). Some authorities have argued that the coverage is exaggerated and lower at about 38.4 %. (52–54) One-third of those active memberships are from the informal sector. (40) While in Kenya, the K-NHIF as at the end of 2018 reported their membership coverage is over 50% of the Kenyan population, consisting of 7,6 million contributors who together with their dependent sum up to 27.2 million. (55) This implies a considerable rise in coverage compared to the DHS 2014 or KHHEUS who both estimated around 17% of the Kenyan population has insurance then. (56) Resident in urban areas had a better coverage than rural areas, where most of the population resides. Coverage was also higher among educated and upper wealth quartiles. Formal sectors for which enrolment was compulsory were more covered than informal sectors for whom enrolment is voluntary. Even though there is no screening to join the K-NHIF, it was reported that residents who perceived their health status as good were more covered than those who thought their health status was poor. (56) The Hospital Insurance Subsidisation program (HISP) launched by the government and partners in 2014, covers the poor and vulnerable like orphans, initially targeting about 142,000 people in 23,000 households and eventually hope for an upscale to 10% of the population. (19) Households covered were selected from the poverty list of orphans and vulnerable children developed and maintained by the country's Ministry of Labour, Social Security, and Services. Those on the list were identified using a combination of proxy means and community verification. In 2016, the program was scaled up to approximately 170,000 households with about 600,000 individuals. (19) In Tanzania, as of December 2019, the NHIF report that coverage was around 9% of Tanzania's population (4.8 Million). (57) The RAMA and MMI together account for about 2 per cent of the total insurance coverage in Rwanda. (39)

4.1.3 Services covered

The NHIS mentions a minimum package with an extensive list of various services, covering about 95% of all disease conditions in the country. These services are accessed at all levels but through a referral system from bottom-up, and a proposed gatekeeping mechanism at the primary or district level of care. The services are provided by government facilities (54%) private for-profit (40%), private not for profit and faith-based (5%) and quasi-government (1%). (45,46) Initially, the NHIF in Kenya only covered inpatient services, but in 2015 a reform was dome to include outpatient services, and these were accompanied by an increase in premium. The K-NHIF also introduce 'special packages' which included chronic conditions, surgical care, renal dialysis, chemotherapy and some advanced diagnostics, like computed tomography scan, magnetic resonance imaging. HISP beneficiaries receive a comprehensive list of services from contracted public and private providers, though the package is smaller compared to the NHIF standard package. (19) For Tanzania the funds cover from primary care services to specialities services, however, a list of special care and some not listed all require administrative approval before funding. The services include inpatient services, outpatient services, all these provided by public, faith-based and private facilities accredited by the NHIF, from primary care to national referral levels. (43,44) Those who are covered by (NSSF/SHIB) have a different package, consisting of inpatient and outpatient services, though limited compared to the NHIF package. (48) The proposed Single National Health Insurance (SNHI) if implemented, will offer two packages, the MBP modelled after the iCHF and the MBP+ modelled after the NHIF package. MBP will target the informal sector and MBP+ the formal sector. (57) RAMA covers curative and pre and post-natal care, including childbirth. Services are accessed through all the different level of care, and most follow the referral process except for emergencies. These services in the benefits package include; outpatient, inpatient, maternity (pre and post), essential drugs and medical imagery and laboratories tests. (39)

4.1.4 Cost covered

The formal sector contributes to the NHIS 2.5% of its 17.5% contribution to social security. The informal sector, which forms the largest part of the population, is required to subscribe and pay a fixed premium initially set at 72000 GHC the lowest, and scaled u-p according to income categories. Other sources of funding for the scheme include a VAT, national insurance levy on goods and services of 2.5%, allocations from budget through parliament, donations and interest from investing funds from the scheme. Funds from the levy are intended to subsidies for lowest income groups that are not required to pay the premium after registration. (45) In the case of the K-NHIF premiums are deducted entirely from member's salaries, with no deduction from employers. The deducted premium is scaled according to income levels. The premium for the informal sector is charged as a flat rate. Premiums were reviewed in 2015 after1988 when they were last reviewed. (19) In Tanzania Funds for the NHIF are from membership contribution, donations, investment, awards or money disbursed government should it happen. The Public sectors workers are required to pay 6% of their earnings, shared equally between them and their employer. Members are required to pay excess charges in the case where the insurance cannot cover all the expenses incurred by the beneficiary. For other members other than public sector workers. (43,44) While the SHIB is financed through a combined social security contribution of 20 per cent of wages, 10% from the employer and the employee respectively. (47) For pensioners, a 6% deductions are made from their pension. (48) In RAMA, the public sector employees pay 15% of their basic salary, equally diving this amount between the employer and

employee (7.5% respectively). While MMI members pay 22.5%, with the ministry of defence paying 17% and members are paying 5%. In addition to these contributions, households and beneficiaries are required to make copayments with the amount depending on the type of services been accessed. In RAMA, these copayments account to 15% of the cost of care. (39) Are apart from covering the cost of services for their beneficiaries Social Health insurance schemes are required to contribute part of their revenue to the NGF National Solidarity fund about 1% as a pooling mechanism to equalise between the SHI and MHI (49)

4.2 Community-Based Health Insurance schemes

4.2.1 Formation and governance

CBHI like SHI were also found in all four countries and in Rwanda which has the most developed and extensive CBHI, it was the predominant scheme. The concept of CBHI insurance was in existence since the 1960s. They, however, become more popular in the 1990s after the reintroduction of the direct payment policy in 1996. It was after this period that the modern Mutual health insurance (MHI) started to gain grounds. (58) MHIs are autonomous and locally administered schemes, with members having the democratic right to elect managers in general assemblies. They also decide on the package, premium and period of subscription. Local community members elected to manage the scheme and are responsible for the day to day activities from the collection of premiums, bank deposit to allocation. (59)

Community health funds (CHFs) which were enacted in 2001 after initiation of a pilot in 1997, are the Tanzania model to CBHI, established at the community level by the local government for individuals and households to contribute partly to their health care financing needs while complementing government efforts. CHF design for the informal sector and rural areas operates at district-level, and the urban counterpart TIKA (Tiba Kwa Kadi) was later formed to target informal groups in the urban city. Its membership is voluntary, the households that do not enrol have to pay full user fees on utilising services. The objective of the CHF fund was to mobilise financial resources, provide quality, sustainable and affordable services, and improve health care services at the community level by community involvement and ownership. (60) The designing of the CHF is specified in a by-law that is approved by district managers, community groups and office of the Prime Minister. Administration of the CHF is by the LGA, councils through the council health service board. All this under the supervision and advisory of the ministry of health and local government. The Council Health Service Board, which comprises medical professionals and community representatives, supervise the use of funds from user fees and the CHF. The CHF co-ordinators, who are typically employed as health secretaries, oversees the operation of the funds. They report to the district on membership, and amount of fund generated and use. A Ward Health Committee and the Health Facility Governing Committee (HFGC) work with health workers in facilities to get people to join and keep the community informed about the funds collected and used. The CHF co-ordinator trains the HFGC members, who are comprised of facility health workers and elected community members. In some districts, there is a central CHF account where the funds are deposited. Others facilities have their accounts bank and deposit funds directly. (61) A memorandum of understanding was signed between the NHIF, the MoHSW, and the Prime Minister's Office, Regional Administration and Local Government, with the rationale of giving management responsibilities of CHFs to the NHIF for three years pilot phase, starting 2009. The decision was guided by the objective of increasing national health insurance coverage in line with the Health Sector Strategic Plan and a range of other factors (62)

In Kenya, while several community-based financing schemes have emerged over time to meet the healthcare financing needs of low-income earners, groups largely left out by the NHIF and private insurance schemes. CBHI across the country vary greatly in type, scope and range from small funds run by community welfare groups to large NGO based schemes. Information about these schemes is only beginning to be gathered on their size, capacity, performance and roles in healthcare financing and risk reduction. There is no specific regulation for CBHI, but the schemes are currently registered under the Ministry of Gender and Youth and have formed an umbrella association. The schemes often finance other needs outside healthcare. (32) One example of CHBI in Kenya is the Samburu CBHI, which was formed in 1988 for residents in the Samburu catchment area. It was initiated with the help of an NGO which injected a seed fund to finance the purchase of vehicles for outreach, salaries for staff and infrastructure development of the two dispensaries. Patients seeking waivers of payment due to lack of funds had given the NGO the inclination to establish the CBHI. (63) Ghana's NHIS provides a CBHI like scheme through the DHMIS and also allows for private individuals, communities, faith-based organisations to form private CBHI non-profit, though all resident should still subscribe to the NHIS/DHMIS.

4.2.2 Population coverage

Community health insurance coverages in Ghana and Kenya are limited but more extensive in Rwanda and Tanzania. Insurance coverage in Rwanda has increased markedly over the last two decades, though initially, the rise in coverage was gradual. (58) Of households insured in Rwanda, 97% are covered by the CBHI. (64) CBHI covers private formal sector employees and the informal sector who form the major part of the population. CHBI are in all 30 districts of Rwanda and the 403 sectors and health centres. (65) CHF/TIKA account for about 8% of the total insurance coverage in Tanzania, out of 16%. (66) In Kenya, the Samburu 7.1% of the households with the target area held current membership, and over a half had defaulted in the payment of premiums (59.8%) while 33.1% had never been members to the CBHIS. (63)

4.2.3 Services coverage

MHI covers its membership with all outpatient preventive and curative services at the health post and health centres. Some curative services not available at these levels are covered in the districts and national referral level. Services are in 2 packages, the minimum package provided at the health post and health centre level and the complementary package provided at a higher level of referral. (39,58) All packages include inpatient and outpatient services. (49)

The benefit packages for the CHFs/TIKA include outpatient care at the facility of registration and referral care for a few districts facilities that have a contract with higher-level facilities. (61) The CHF package compared to other schemes like the NHIF and SHIB/NSSF is quite small as contributions are lower. (67)

The Samburu scheme in Kenya as an example of CBHI provides curative and preventive health services. The curative services include treatment of common endemic diseases while preventive services are health education, promotion but mainly mother and child clinic services. Members are entitled to an emergency ambulance and referral services (63)

4.2.4 Cost coverage

In terms of revenue collection, MHI relies on its membership contribution. This amount used to be a flat rate, but with the introduction of the Udebuehe and categorisation of households into income groups' premiums were set proportionally into categories. Apart from the premium members are required to do a copayment on each visit, this is set at 5% at Health post and health centre level and 10% at district and referral hospital levels. The lowest group which represent the poor are exempted from co-payments, as their premium and co-payments are covered by the government and developmental partners. The distribution of the fund is such that 55% goes to the health post and health centres towards covering the cost for the minimum packages. While 45% goes to the district level and national level towards payment for the complementary packages. (49)

Similarly, for the CHF/TIKA funds come from the membership, the amount determined by the funder managers and the community. So different community have a different amount of premiums. Premium also dependant on the size of services sort after, inpatient or outpatient, for example. Other sources of funding including from government contribution to the funds, grants for councils, organisation, any donations, or any other legally acquired monies. Exemption from paying subscription can be granted by the ward committee or the minister of health. (60) Reimbursement is not given to primary-level providers for the use of services by CHF members. However, facilities can use CHF revenue to purchase drugs, medical supplies, equipment, and furniture and undertake maintenance work and pay certain allowances. The central government pays a matching grant to the funds per CHF/TIKA member – 100% for CHF members and 75% for TIKA members. (61)

Financial records for the Samburu CHBI revealed that the cost of running the scheme was largely on NGO's subsidy, with membership subscription only contributing 10%. Unlike members who pay through premium, non- members have to pay out of pocket—close to three-quarters of the respondents (71.7%) paid for health care either by selling livestock or household assets. All the current CBHIS members paid premiums from livestock sales. (63)

4.3 Private Insurance

4.3.1 Formation and governance

In Ghana, private insurance is either in the form of private mutual insurance schemes (PMIS) or private commercial insurance schemes (PCIS). PMIS are groups established exclusively for the benefit of its members and include – a community-based, faith-based, organisation based or association of individuals. Only individual membership can enrol and not cooperation's and employees and employer are under no obligation to join these schemes. It is own by its membership. PCIS, on the other hand, are those insurance established for-profit and are owned by its shareholders, premiums are paid by risk. These schemes are required to be registered and accredited by the NHIA. They carte mostly for private-sector employees and experts and self-employed or individual that can afford to buy. Premiums and packages are in different forms, adjusted to suit targeted clients. Residents are obligated to be registered to the NHIS and a private scheme if they can so afford. (68) In Rwanda, Private health insurance started operating in 2006 covering private company workers and individuals that can afford to subscribe. (65)

Private health insurance scheme in Kenya, developed over the years becoming more visible in the early eighties with growth in health insurance portfolios of insurance companies and the introduction of health management organisations. The emergence and growth of private insurance follow the expansion and growth of private health providers, including private for-profit and faith-based organisations. Private health insurance schemes are regulated by the Insurance Regulatory Authority as stipulated in the Insurance Act Cap 487. (32) Health sector reform in Tanzania during the mid- to late-1990s, saw private health insurance became popular with most private companies employees. Private health insurance companies are supervised by the Insurance Supervisory Department. (47)

4.3.2 Population Coverage

Private Health Insurance accounts for a small proportion of health insurance coverage across the region. In Ghana, Rwanda and Tanzania coverage are about 1% of their populations. (47,64,69) In Kenya, private health insurance has been largely stagnant, covering only 2% to 4 % of the population. (35,70) . Coverage is only earned when the premium is paid, no exemptions. (68)

4.3.3 Services Covered

Three packages are identified under the PHIS. These are the duplicate package, supplementary and the complementary packages. Duplicate package are packages covering services that are covered by the NHIS, and since an individual can belong to both schemes, should an individual utilises the private package, PHIS covers the full cost. Supplementary packages comprise all services not covered by the NHIS and PHIS bears the full cost for Individuals with PHIS. Complementary packages are services not fully covered by NHIS, and members with PHIs can either use these services with their NHIS card or Private card, who pays depend on o which card use. NHIA approves all PHIS packages before implementation. (68)

4.3.4 Cost Covered

Cost is covered according to premium and package subscription. Premium is risk-rated.

4.4 Others

As observed above, not everybody in these countries is covered by health insurance. They are left with the options of either, paying for facilities and services directly from out of pocket at full cost or rate subsidised by government and donors. Innovate, and other micro health financing schemes are also emerging in these countries

4.4.1 Government and Local Government budget allocations

Governments domestic public funding was found to be an integral part of financing health care and some schemes in these countries. In Kenya, for example, government

allocations go towards recurrent expenditures, construction, maintains, salaries, drugs and so on, and these absorb most of the allocated funds and limited amount for developmental programs. The government is also introducing program waivers, like the free maternity services in public health facilities and removal of user fees in public primary healthcare facilities in 2013. These user-fee waivers are reimbursed by the government. (71,72) The government, in partnership with donors in 2014, introduced the HISP program with the NHIF for expanding coverage of the poor. (19) These allocations to health from the government are done at central government and County governments' level with most of the allocation coming from the county, in 2014-15 financial year about 38 of the 47 counties allocated at least 15% of their budget to health. (35) Similar trend also in Tanzania, where most of the government spending (60 to 68%) on health is on salaries, commodities, drugs, and other recurrent items. This indicates limited additions or capital improvement. Government expenditures added to the recurrent cost, are utilised in subsidisation of a premium of lower-incomes and vulnerable group. This was also the case in Rwanda and Ghana. (73)

4.4.2 Donor

Donor funding plays a significant role, especially in Rwanda and Tanzania, as illustrated in **Table 2**. Insurance scheme in Rwanda and Tanzania targeting the poor who cannot afford premiums rely on government and donor subsidises to feel this gap. In the financial year 2014-15, 57% of the development health budget in Kenya was funded by development partners, even with increasing domestic funding at the time. Developmental partners like the World Bank also sponsor the HISP scheme. (35) Due to Ghana's changing status to a middle-income country donor funds have been dwindling, with a drop from USD 360.48 million in 2005 to USD 178.93 Million in 2010, for example. International funding decline by 65% in this same period. (74)

4.4.3 Out of pocket payment

The presence of user fees and OOPP still play a significant role as a means of accessing healthcare in these countries, especially with low insurance coverages. In Rwanda were coverage was significantly high, co-payments and cost of accessing added service not included in the minimum package all contribute to OOPP. With about almost 80% of Tanzanian not covered by any prepayment schemes, they are left with having to utilise services through direct OOPP, these mostly comprised the large informal sector and the very poor groups. (73) In Ghana, a number of those in exempted groups due to lack of awareness or challenges with registration are left with the option of accessing care via direct payment. Also, stock out and low tariffs resulted in some providers introducing informal copayment which contribute to the amount of OOPP. So OOPP in these countries are for services not covered health insurance, or government and donor subsidise or informal payments. (45)

4.4.4 Innovative and other micro-insurance schemes

As lack of financial access to healthcare continues, new mechanisms, on how to raise funds and pay for health are emerging. This innovative trend was observed in all four countries, and mobile technology is playing a key role in this transformation. Some example of these

includes the Tigo family care in Ghana, where members save for healthcare expenses through monthly airtime deductions. (75) In Kenya, M-TIBA, a mobile-based system where users are allowed to send, save and receive funds to access healthcare, using their mobiles phones. These services are provided by Safaricom, Pharmacess, and Carepay. The Pfizer foundation encourages people to enrol by rewarding them with 50KSh with every 100KSh deposited. (76)

There are also other forms of microinsurance, non-profit, nongovernment micro-insurance schemes, and in Tanzania, there are sponsored by religious groups, informal groups, and associations. (77) A private micro-insurance initiative was recently started in Tanzania, financed in part by the government of the Netherlands through PharmAccess and The Health Insurance Fund. The scheme is directed at entrepreneurs who receive micro-credit from the Pride Bank. Pride has partnered with the Tanzanian insurer Strategis to provide the entrepreneurs with a health insurance package called the Strategis Community Health Insurance Plan (SCHIP), participants pay approximately 10 per cent of the premium as a co-payments. The other part of the insurance premium is provided by The Health Insurance Fund, which is an international organisation based in the Netherlands. The fund works with a grant from the Dutch government; other funders such as the United State Agency for International Development (USAID) are also reported to have joined in the program. The longer-term sustainability of this approach—once the primary funders leave the sector will be an important element in the evaluation of these approaches. (47)

4.5 Challenges

In Ghana, challenges with registration and renewal processes, especially in the rural areas, with difficulty from manual registration and recording of claims. The high cost of transporting this information to one of the four zonal centres. (46) Fiscal challenges in 2012 lead to increased delays in reimbursement of claims, beyond the proposed timeline in some cases. (46) Issues of low tariffs and stock out as a result of providers been able to generate enough income to pay off supplies in times, especially with delays in payment of claims. This conundrum leads to several providers introducing unofficial co-payments. (46) Other challenges reported include high administrate cost, corruption, adverse selection and management inefficiencies. (46) In Kenya, the administration of the schemes was also found to consume considerable resources. The proportion of administrative and operating costs was at some point 74% of revenue, though this fell to 45% in 2010. Seventy-one per cent of operating and administrative expenses is accounted for by personnel expenses which have increased at the rate of 15.3% per annum over the last five years. (32)

In the developing world, a large fraction of the population is not employed in the informal sector. The challenges of enrolling and raising revenues from the informal sector is a huge one, such that the revenues raised are rarely those that would be expected based on contribution levied, and the collection costs are formidable. (21) In Kenya, the flat rate contribution among the informal sector makes it difficult to collect premiums and increases attrition rates among this population. (78)

The cost of services at the point of use is typically higher for those not enrolled in health insurance or even for those enrolled, either because of co-payments, or the benefits package is limited, and they end up paying out-of-pocket for care not included in it. These facilities accredited often have fewer resources and are argued by some to deliver poorer quality and more limited care. (21)

4.6 National Health Expenditure

As observed above, funding for health is from diverse sources of health financing schemes, from general government tax, health insurance, external donor support and a private household out of pocket. In turn, the spending or who pays for health follows a similar pattern as illustrated in **Table 2.** (79) Health insurance contribution to current health expenditure (CHE) is still a small fraction of the total. For example, Rwanda with the highest contribution of NHI to CHE compared to the other, it is only about 17% of which 12% is SHI. Ghana follows with 10% and Kenya and Tanzania 8% each of CHE coming from compulsory health insurance schemes. Government expenditure of the CHE still plays a significant role, this account for about 33% in Rwanda and Ghana, and 43% in Kenya and Tanzania. External donors' expenditure on health also accounts for a big share of CHE, in Rwanda (50%) and Tanzania (32%) but lower in Kenya (18%) and Ghana (14%).

Table 2. 2017 National Health Expenditure. WHO Global Health Expenditure Database. (79)

	Countries			
Indicators	Rwanda	Ghana	Kenya	Tanzania
Gross Domestic Product (GDP) per Capita in US$	749	2,046	1,595	930
General Government Expenditure (GGE) as % Gross Domestic Product (GDP)	25	18	26	17
Current Health Expenditure (CHE), as % Gross Domestic Product (GDP)	7	3	5	4
Domestic General Government Health Expenditure (GGHE-D), as % Gross Domestic Product (GDP)	2	1	2	2
Current Health Expenditure (CHE), Per Capita in US$	49	67	77	34
Domestic Health Expenditure (DOM) as % of Current Health Expenditure (CHE)	50	86	82	68
External Health Expenditure (EXT) as % of Current Health Expenditure (CHE)	50	14	18	32
Domestic General Government Health Expenditure (GGHE-D) as % Current Health Expenditure (CHE)	34	33	43	43
Domestic Private Health Expenditure (PVT-D) as % Current Health Expenditure (CHE)	15	52	39	25
Out-of-pocket as % of Current Health Expenditure (CHE)	6	40	24	24
Domestic General Government Health Expenditure, as % General Government Expenditure	9	6	8	10
Compulsory Health Insurance as % of Current Health Expenditure (CHE)	17	10	8	8
Social Health Insurance as % of Current Health Expenditure (CHE)	12	10	8	8
Government Subsidy to Social Health Insurance (TRAN) as % of Social Health Insurance (SHI)	16	72	6	0
Self-Employed Contributions to Social Health Insurance (SHI-SE) as % of Social Health Insurance (SHI)	0	4	0	0

5.0 Discussions, conclusions and recommendations

5.1 Discussions

Sub-Saharan Africa continues to make progress in recent decades toward improving healthcare, with a downward trend in infectious diseases including HIV and malaria, general mortality and morbidity. However, there are still challenges, including underfunding from domestic sources and dependence on external donors and high OOPP. The reliance on donor and high OOPP may not always be sustainable. As a result, many countries across SSA, have in the recent decades started taking actions, aiming at improving domestic funding for health and possibly increase access to healthcare while also reducing the risk of catastrophic health expenditure (UHC goal). One of the suggested approach to do this is to introduce prepaid and contributory schemes - like health insurance schemes, as evidence shows they can be effective in improving funding, access, and utilisation and reduce impoverishment. (45)

While these have shown to improve funding questions on how effective they can be in LMIC with, poor regulation, governance, a large informal sector, poor and vulnerable groups unable to contribute or followed up to contribute. (21) None the less African countries are taking on the initiative of introducing and facilitating the development of NHI schemes in their respective countries. This study describes the characteristics differences of NHI schemes in Sub-Sahara Africa, using four countries across the region as case studies.

These countries, after independence, all operated tax-based free access, healthcare policy. This was probably influenced by British colonisation or their membership of the commonwealth. Efforts to address financial access to health care through insurance schemes go as far back as the 1960s as evidence in Kenya. However, health insurance schemes were unpopular. After the commencement of the cost recovery programs in the 1980s and early 1990s across the region with the introduction of 'cash and carry', user fees, insurance schemes started taking off.

NHI schemes were in all four countries, mostly started as traditional SHI, depending on salaries of formal sector workers. However, with time legislation and reformation occurred for vulnerable groups and the inclusion of the informal sector. It is only in Tanzania that the scheme remains close to the informal sector generally, but even there it has been modified to include organised groups like drivers' associations. Ghana's scheme, NHIS, the most recent of the four is a combination of SHI and CBHI with access for both formal and informal sector. This trend is observed as countries are abandoning the idea of traditional SHI, of depending on salary-related premium alone, and moving towards incorporating the informal sector. (80) CBHI found in all four countries but developed and implemented to a different extent. In Rwanda, it was the predominant scheme, and in Ghana; it was also of very significant contribution to the overall coverage. In Kenya, CHBI was in existence, but not as developed as the other countries and not backed with a national framework.

As the findings illustrated, not only did each country had an SHI scheme, but sometimes, multiple SHI schemes were present along with private schemes, community-based schemes, which themselves were also multiple. For example, Tanzania has the NHIF separate from the SHIB/NSSF, Kenya had the NHIF which operated a variety of smaller schemes. Rwanda also has a separate scheme for public or civil servants, for the military. CBHI were also multiple and fragmented in all countries, found attached to health centres, communities, counties or districts. This was the case in Kenya, Rwanda and Tanzania. The MHI Rwanda were multiple

within districts. Tanzania has multiple CHF in rural areas and TIKA for urban areas. Ghana initially had a DMHIS for each district, but it was abandoned in 2012. As observed from this trend fragmentation has been a significant issue across the four countries. However, efforts to merge and pool these schemes is evident in all countries. Rwanda established a National Guarantee Fund (NGF) and a District Solidarity Fund (FDG) to bolster support for the community-based MHI and improve equity between SHIs and CBHI. The NGF pools fund from SHI, the government of Rwanda and donors to reduce the inequity between SHI and MHI. The FDG pools MHO, donor and government allocations to districts, to pool multiple MHI with districts. (47) In Ghana, reformation in 2012 attempted to bring to an end the fragmentation from the multiple DMHIS IS to form one NHIS and create NHIS branches in each office. Likewise, in Tanzania, there is a proposal to form an NSHI scheme, all aiming to pool schemes and reduce fragmentation. In 2009 also a pilot was done for NHIF to administer the CHF schemes.

Health insurance coverage in Rwanda and Ghana were the highest, here both SHI and CBHI were mandatory for the entire population, with exemptions made for vulnerable groups and subsidisation program for the very poor and vulnerable introduced. Attempts to categories the informal sector and create graded income groups and premium, as opposed to flat-rate, was also more organised in Rwanda and Ghana compared with Kenya that had a flat rate and voluntary system for the informal sector. The NHIF in Tanzania, which had the lowest coverage, has no inclusion for the informal sector. Researchers oppose to NHI in LMIC have cautioned that the difficulties of accessing the informal sector, which is usually the larger sector, pose a risk to the sustainability of NHI, especially SHI in these countries. As stated above, this was a concern, and three of the four countries have made modifications to incorporate the informal sector.

Clear legal frameworks for governance and regulation, community participation, ownership and awareness were also important in improving coverages, as observed in Rwanda and Ghana compared to Tanzania and Kenya. The large informal sector is also heterogeneous, and one challenge was the classification of these groups into their right income group. This was important to decide on a graded premium according to income, and aid enrolment and improve coverage. In the four countries, Rwanda had the most developed system, the Udebuehe, which was a local method, with community origin and ownerships. This was also observed in Ghana, where the policy document categories the informal sector into groups. While in Kenya and Tanzania, schemes rely on the ministry of labour or local government to identify groups legible for subsidisation. Such a process of classifying the informal sector and the vulnerable group could be clouded with corruption and favouritism if not well managed and may need further research to help these countries.

Basic Benefit packages covered were markedly different among the countries. It ranges from an extensive package in Ghana, covering about 95% of conditions in the country to more focused packages on primary care in Rwanda, Kenya and Tanzania. Also, benefits packages were different between similar schemes within the same country. In Tanzania the NHIF scheme is was bigger than the SHIB/NSSF. SHI packages were different from CBHI or those for formal sector different from the informal sector. Such differences could affect enrolment of the informal sector. As Wagstaff argued, enrolling non-poor informal sector workers and their families in SHI can prove even harder, in some other regions, especially when the terms on which informal household are enrolled are unattractive – usually flat rate and smaller benefits package. (21)

In Kenya, employees paid the premium cost of the K-NHIF entirely, with no contribution from the employer. In contrast, employers and employees paid partially in other countries. In

Tanzania, the government even pays matching funds to the CHF/TIKA schemes. However, subscribers to the MHI and RAMA in Rwanda do co-payments on each visit. In Ghana, when payment of claims was delayed, the introduction of informal payment is reported.

Despite introducing insurance schemes as an additional source of domestic funding, and means of achieving UHC - the potential for improved access and reduced impoverishment. There are still considerable gaps in coverage, benefits packages and funding of these services covered. The small formal sector, low levels of premium, and the inability of the poor and vulnerable groups to pay up premium, low coverages in the informal sector, all continue to create a gap. As a result, OOPP in the four countries is still significant, as a lot of people not covered by these schemes have to pay out of pocket for health services. As health insurance may not always translate to sufficient funds. (81)

Where OOPP is low as in Rwanda with OOPP at less than 20% of THE, huge external donor and government contribution was observed. So government tax-based funding and foreign donor support continue to be very important. This trend was observed in all the countries, except Ghana, that has little external funding compared to the other three. This is important as starting NHI does not mean funding from government or donor should stop as even countries with predominant traditional SHI models like the Netherlands are reliant on government subsidies for some services. (26)

Equity, risk sharing and risk equalisation are a critical consideration for health financing schemes. In this regard, no screening was done during the enrolment of all schemes across the four countries. Household registration and enrolment into the CBHI scheme ensured some amount of measures was in place to reduce adverse selection and increase risk-sharing. This need to be combined with a measure aimed at reducing fragmentation and increase pooling. Exemption and subsidisation are also implored to enhance equity and risk-sharing changes and exemption for vulnerable groups and the poor. In Kenya, a subsidise scheme was introduced targeting the poor and orphans. It is important to note that the question of inequity still remains, with challenges of geographical access and lack of services for certain communities and groups still present. Risk sharing and equalisation are limited with high fragmentation rate, as risk is not spread nationally. The urban-rural split was quite evident as SHI were more urban and CBHI more rural except for Ghana that now operates one scheme nationally. As seen in Tanzania, even CBHI are implemented in two forms, a rural-based CHF and an urban-based TIKA.

There seems to be a trend of health insurance (SHI and CHBIs) developing into NHI with a more national outlook, as schemes which initially started targeting formal sector employees are adapted to incorporate private sector as in Rwanda and Tanzania and even changed further to incorporate informal sector as in Kenya and Ghana. CHBI in Rwanda and Tanzania were supported with national legal framework and regulations, and Ghana colludes their DHIS into one NHIS. This trend to improve legislation and formalise administration, aiming to reduce fragmentation, promote effectiveness and sustainability, is also seen in Asia and Latin America. (20,82) In Rwanda, CHBI was further enhanced with the appointment of districts' directors from the ministry of health to supervise the schemes at the district level and introduce training for the community manager of the schemes. Tanzania NHIF signed a 3-year pilot in 2009 for the NHIF to take administration of the CHFs, aiming to improve the efficiency of the schemes.

Another observation was in the trend of governance and regulation of insurance schemes apart from setting up the legal framework. Wagstaff had argued that the governance of NHI agencies in the LMIC often leaves much to be desired, due to high running costs and poor purchasing practices. (21) Concerns like this may probably explain the change in governance that was observed in all countries In Kenya, Rwanda and Tanzania the schemes started under the

ministry of health and later moved away to more autonomy or towards social security authorities or ministry of labour. For CBHI, governance and administration were more local community based or local government with involvement of community member, health centres workers and local government administration as the case may be. However, increasing central and national government or authority is observed with central support through supervision and training and even administration. With Tanzania, CHBI governance is almost separate from NHI. Attempt to merge CBHI schemes with the management of the SHI, or social security institutions are emerging. As with the NHIF taking up CHF administration, RBBS taking over MHI administration in Rwanda.

The scope of this topic is broad and studying four countries as case studies, within a word count of 12, 000, limited the depth of analysis and discussion possible. Time was also of the essence. This also affected the level of background given on countries and principles of the topic – assuming readers will use other material on health financing to review the principles covered in this review. Some of the quoted numerical data from DHS or National Statistics were several years old, though were possible, I made attempts to find the most recent.

5.2 Conclusions

NHI in SSA consists of multiple health financing schemes, comprising of a mixture of SHI, CHBI, private and other micro insurances. They exhibit characteristic differences within countries and between countries. In the result section, we see the differences in their formation, governance, coverages, benefits packages and the proportion of cost covered. As efforts are made to expand coverages, SHI are modified to incorporate informal sector, and CHBI are formalised and in some cases integrated into SHI as a National scheme. This incorporation of the informal sector is improved where the informal sector is identified and classified into incomes groups such that a graded premium is set as opposed to flat-rate premiums. However, challenges are still common, as governance is still large as a result of fragmentation from multiple smaller schemes. Pooling and risk-sharing are limited as pointed out in the discussion section. Where schemes were backed with government leadership and legal framework, to improve governance, and management, they flourish. In all countries for both SHI and CHBI, certain groups will be unable to enrol, and these should be exempted or supported by subsidies. Lastly, as pointed out from the national health account, the contribution of NHI to current health expenditures is still very small and therefore the roles of tax, OOPP and donor support remains paramount to health financing in SSA, as NHI keeps developing. Countries about to commence NHI can learn from the successes and challenges from these four countries and other LMIC. So As African countries strive towards improving domestic funding for health and achieve UHC, health insurance can be a good policy option to raise additional funds for health. Still, it must be done as a complementing option to existing tax and donor sources of funding. While aiming to reduce OOPP and hence improves access to services, utilization, and prevent impoverishment.

5.3 Recommendations

1. Promote the integration of schemes - For countries which have already commence NHI implementation, it is important to set up clear legal frameworks to back the governance and regulation of insurance schemes, especially CBHI. This will reduce fragmentation and improve management and administration of scheme(s) and fund(s). For countries,

on the road to implement NHI, this will be an important issue to note and ensure steps taken to promote. Ensuring schemes are linked, and large pools created to increase risk-sharing across the general population.

2. Promote inclusion of informal sector by legislative support, and adopting methods of identification and classification of the informal population into different income groups. Using approaches like the Udebuehe in Rwanda that is community own and participatory, can be very useful in this regard. It is important to be aware of the potential shortfalls of sure a system, like misclassification of people, corruption and favouritism and put necessary checks in place to reduce this. It would be required to repeat this process at intervals, as the status of people might change over time. Countries already implanting NHI or about to do so can both benefit from this classification of the informal sector, as appropriate premiums can be set. However, methods to do this are only emerging, with few examples, and still need further research and discussions.

REFERENCES

1. United Nations Department of Economic and Social Affairs (UNDESA). THE 17 GOALS | Department of Economic and Social Affairs [Internet]. Sustainable Development. 2015 [cited 2020 Aug 5]. Available from: https://sdgs.un.org/goals
2. WHO | SDG 3: Ensure healthy lives and promote wellbeing for all at all ages. WHO [Internet]. 2017 [cited 2020 Aug 5]; Available from: http://www.who.int/sdg/targets/en/
3. Sub-Saharan Africa. Strateg Surv [Internet]. 1987 [cited 2020 Mar 11];88(1):229–31. Available from: https://2012books.lardbucket.org/books/regional-geography-of-the-world-globalization-people-and-places/s10-subsaharan-africa.html
4. The Economist explains: What is Tumblr? | The Economist [Internet]. [cited 2020 Mar 11]. Available from: https://www.economist.com/the-economist-explains/2019/03/07/what-is-sub-saharan-africa
5. The Fund For Peace. Fragile States Index Annual Report 2019. 2019 [cited 2020 Jun 8];1–44. Available from: www.fundforpeace.org
6. Bertone MP, Jowett M, Dale E, Witter S. Health financing in fragile and conflict-affected settings: What do we know, seven years on? Soc Sci Med. 2019;232(March):209–19.
7. Jowett M, Dale E, Griekspoor A, Kabaniha G, Mataria A, Bertone MP, et al. Health Financing Guidance No 7 Health Financing Policy & Implementation in Fragile & Conflict-Affected Settings : Final Implementation in Fragile &. 2019;(7). Available from: https://www.who.int/health_financing/topics/fragility-and-conflict/Health-Finance-FCAS.pdf?ua=1
8. WHO Africa. African Regional Health Report 2014 The health of the people. 2014.
9. World Health Organization (WHO). The State of Health in the WHO Africa Regon. The State of Health in the WHO Africa Region: An analysis of the status of health, health services and health systems in the context of the Sustainable Development Goals. 2018. 166 p.
10. Alkema L, Chao F, You D, Pedersen J, Sawyer CC. National, regional, and global sex ratios of infant, child, and under-5 mortality and identification of countries with outlying ratios: A systematic assessment. Lancet Glob Heal. 2014;2(9):e521–30.
11. World Bank. Life expectancy at birth, total (years) - Sub-Saharan Africa | Data [Internet]. website. 2020 [cited 2020 Aug 1]. Available from: https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=ZG
12. WHO. The Abuja Declaration: Ten Years On 2001 Promises of commitment and solidarity. 2001 [cited 2020 Jun 3]; Available from: http://www.internationalhealthpartnership.net//CMS_files/documents/working_group_2_report:_
13. Paper D. Tax-Based Financing for Health Systems: Options and Experiences. 2004;
14. OECD. Revenue Statistics in Africa 2019. 2019 Nov 19;2016–7. Available from: https://www.oecd-ilibrary.org/taxation/revenue-statistics-in-africa-2019_5daa24c1-en-fr
15. The Global Fund. Expanding the fiscal space for health in Africa. 2016;(June). Available from: https://au.int/sites/default/files/pages/32895-file-expanding_the_fiscal_space_for_health_in_africa.pdf
16. Kimani DN, Mugo MG, Kioko UM. Catastrophic Health Expenditures And Impoverishment In Kenya. Vol. 12, European Scientific Journal, ESJ. 2016. 434 p.
17. WHO. Health Systems Financing : The Path to Universal Health Coverage Plan of Action Health Systems Financing : The Path to Universal Health Coverage. world Heal Rep. 2012;26.
18. Waelkens M, Health P, Ulb DB. Community Health Insurance in Low- and Middle-Income Countries. 2017;2:82–92.
19. Barasa E, Rogo K, Mwaura N, Chuma J. Kenya national hospital insurance fund reforms: Implications and lessons for universal health coverage. Heal Syst Reform [Internet]. 2018 [cited 2020 Jul 2];4(4):346–61. Available from: https://pubmed.ncbi.nlm.nih.gov/30398396/
20. Spaan E, Mathijssen J, Tromp N, McBain F, ten Have A, Baltussen R. The impact of health insurance in Africa and Asia: a systematic review [Internet]. Vol. 90, Bulletin of the World Health Organization.

2012 [cited 2020 Aug 10]. p. 685–92. Available from: http://www.niche1.nl/

21. Wagstaff A. Social health insurance reexamined. Health Econ. 2010;19(5):503–17.

22. Edition S. SOCIAL HEALTH INSURANCE A guidebook for planning CHARLES NORMAND & AXEL WEBER. World Health. 2009. 1–161 p.

23. WHO, The World Bank. Tracking Universal Health Coverage: 2017 Global Monitoring Report [Internet]. World Health Organisation. 2017 [cited 2020 Jul 14]. Available from: https://www.who.int/publications/almaata_declaration_en.pdf%0Ahttp://www.who.int/gender-equity-rights/knowledge/anchoring-uhc.pdf%0Ahttp://apps.who.int/iris/bitstream/handle/10665/259817/9789241513555-eng.pdf;jsessionid=C29E21005A5692511BE2B70BD2D3C941?se

24. Thomson S, Evetovits T, Cylus J, Jakab M. Monitoring financial protection to assess progress towards universal health coverage in Europe. Public Heal Panor. 2016;02(03):357–66.

25. M. ΘΕΟΔΩΡΟΥ MM. A System of Health Account. 2011.

26. Wagstaff A. Social Health Insurance Reexamined. 2008;1131(2007):1127–31.

27. WHO. WHO | Universal coverage - three dimensions. Who [Internet]. 2015 [cited 2020 Aug 9]; Available from: https://www.who.int/health_financing/strategy/dimensions/en/

28. Roberts MJ, Hsiao WC, Reich MR. Disaggregating the universal coverage cube: Putting equity in the picture. Heal Syst Reform. 2015;1(1):22–7.

29. National Institute of Statistics Rwanda (NISR). Size of the resident population | National Institute of Statistics Rwanda [Internet]. 2019 [cited 2020 Jul 12]. Available from: http://www.statistics.gov.rw/publication/size-resident-population/

30. UNDP. Human Development Data (1990-2017) | Human Development Reports [Internet]. Web Page. 2019 [cited 2020 Aug 2]. Available from: http://hdr.undp.org/en/data

31. United Nations. Outreach Programme on the 1994 Genocide Against the Tutsi in Rwanda and the United Nations [Internet]. [cited 2020 Jul 12]. Available from: https://www.un.org/en/preventgenocide/rwanda/historical-background.shtml

32. Deloitte. Strategic Review of the National Hospital Insurance Fund - Kenya. 2012;213. Available from: https://www.wbginvestmentclimate.org/advisory-services/health/upload/Strategic-review-of-the-NHIF-final.pdf

33. Ministry of Health. Republic of Rwanda - Health Financing Sustainability Policy. 2015; Available from: http://www.moh.gov.rw/fileadmin/templates/policies/Health_Financing_Sustainability_Policy_March_2015.pdf

34. Garshong B, Akazili J. Universal Health Coverage Assessment: Ghana [Internet]. 2015 [cited 2020 Jul 5]. Available from: http://apps.who.int/nha/database/Key_Indicators/Index/en

35. African Strategies for Health. Health Financing Profile: Kenya. Online [Internet]. 2016;(May):1–2. Available from: http://www.africanstrategies4health.org/uploads/1/3/5/3/13538666/country_profile_-_nigeria_-_us_letter_final.pdf

36. Dutta A. Prospects for Suatainable Health Financing in Tanzania: Baseline Report. Heal Policy Proj Futur Gr , Washingt DC. 2015;(February).

37. NHIF. NHIF Profile. 1998;1972.

38. Government of Tanzania. The national health insurance fund act, 1999 arrangement of sections. 1999;

39. Health MOF. Republic of Rwanda National Health Insurance Policy. Repub Rwanda Minist Heal. 2010;(April).

40. NHIA. 2012 NHIA ANNUAL REPORT.pdf. 2012.

41. NHIA. National Health Insurance Authority, Annual Report 2009. 2010; Available from: http://www.nhis.gov.gh/_Uploads/dbsAttachedFiles/1(1).pdf

42. NHIA. The Nationation Health Insurance Scheme: anual report 2013. 2013;4.

43. NHIF Website. National Health Insurance Fund Profile. 2020 [cited 2020 Jul 7]; Available from:

https://www.nhif.or.tz/pages/profile#gsc.tab=0

44. George M. Masaju - Attorney General. The National Health Insurance Fund Act. Revis Ed 2015. 2015;(2016).

45. Health MOF. National Health Insurance Policy Framework For Gahna. Minist Heal August 2004. 2004;(August).

46. Agongo EE, Agana-Nsiire P, Enyimayew N, Adibo M, Mensah E. Primary Health Care Systems (Primasys). World Heal Organ [Internet]. 2017;1–48. Available from: http://www.who.int/alliance-hpsr

47. Haazen D. Making Health Financing Work for Poor People in Tanzania. Making Health Financing Work for Poor People in Tanzania. The World Bank; 2012.

48. National Social Security Fund - Social Health Insurance [Internet]. [cited 2020 Jun 26]. Available from: https://web.archive.org/web/20151018234131/https://www.nssf.or.tz/index.php/benefits/english/social-health-insurance

49. USAID. Health insurance profile: Rwanda. African Strateg Heal. 2013;8–11.

50. New NHIF Contribution Rates Kenya Gazette Supplement No.8 February, 2015. 2015.

51. Statistical Service Accra G. Ghana Demographic and Health Survey 2014 [Internet]. 2015 [cited 2020 Jul 25]. Available from: www.DHSprogram.com.

52. Gyapong J, Garshong B, Akazili J. Critical analysis of Ghana's health system with a focus on equity challenges and the national health insurance. SHIELD Group;

53. Kipo-Sunyehzi, Amogre Ayanore, Dzidzonu, Ayalsuma Yakubu. Ghana's Journey towards Universal Health Coverage: The Role of the National Health Insurance Scheme. Eur J Investig Heal Psychol Educ. 2019;10(1):94–109.

54. Mensah SA. Presentation At Health Partner ' s Summit (MOH). 2015;(May).

55. Mwangi GG. Nhif Performance Report. 2017;

56. National Bureau of Statistics Nairobi K. Republic of Kenya Kenya Demographic and Health Survey 2014 [Internet]. 2015 [cited 2020 Jul 6]. Available from: www.DHSprogram.com.

57. Shree Prabhakaran and Arin Dutta. Actuarial Study of the Proposed Single National Health Insurance Scheme in Tanzania. 2017;12. Available from: http://www.healthpolicyplus.com/ns/pubs/7168-7306_TanzaniaActuarialBriefvEDITED.pdf

58. Ministry of Health Rebuplic Rwanda. Mutual Health Insurance Policy in Rwanda. Minist Publ. 2004;(December).

59. Schneider P, Diop F. Community-Based Health Insurance in Rwanda. Heal Financ Poor People Resour Mobilization Risk Shar [Internet]. 2005;(November):251–72. Available from: https://openknowledge.worldbank.org/bitstream/handle/10986/15019/289860PAPER0Health0financing010the0poor.pdf;sequence=1#page=277

60. Community Health Fund. Community Health Fund Act. 2001;3–10.

61. Borghi J, Makawia S, Kuwawenaruwa A. The administrative costs of community-based health insurance: a case study of the community health fund in Tanzania. Health Policy Plan [Internet]. 2013 Feb 1 [cited 2020 Jul 23];30(1):19–27. Available from: https://academic.oup.com/heapol/article-abstract/30/1/19/562588

62. Borghi J, Maluka S, Kuwawenaruwa A, Makawia S, Tantau J, Mtei G, et al. Promoting universal financial protection: A case study of new management of community health insurance in Tanzania. Heal Res Policy Syst. 2013 Jun 13;11(1).

63. Kamau N, Njiru H. Community Based Health Insurance Schemes: Lessons from Rural Kenya. [cited 2020 Jul 22]; Available from: https://doi.org/10.1353/hpu.2014.0023https://muse.jhu.edu/article/536583

64. National Institute of Statistic of Rwanda (NISR), Ministry of Health (MOH), ICF International. Rwanda Demographic and Health Survey 2014-2015. 2015. 615 p.

65. Antunes, Adelio Fernandes, Saksena P. Republic of Rwanda Health Financing Systems Review. WHO. 2008;61.

66. Solomon S, Alley R. A Closer Look at the. Science (80-) [Internet]. 2014;60(June):658–74. Available from: http://www.ey.com/Publication/vwLUAssets/Applying_IFRS:_A_closer_look_at_the_new_revenue_recognition_standard_(June_2014)/$FILE/Applying-Rev-June2014.pdf

67. Mtei G, Ulrika E. Development of the Tanzania Health Financing Strategy. 2013;(6):70. Available from: http://intranet.p4h-network.net/wp-content/uploads/2013/12/2013_10_TZA_CHF-reform-options_revised-version.pdf

68. NHIA. National Health Insurance Authority: Guidelines for Private Health Insurance Schemes in Ghana. 2018;57.

69. Pharmaccess. The-healthcare-system-in-Ghana. 2016 [cited 2020 Jul 10]; Available from: https://www.pharmaccess.org/wp-content/uploads/2018/01/The-healthcare-system-in-Ghana.pdf

70. Maina T, Chen A, Perales N. HEALTHCARE FINANCING OPTIONS FOR KENYA. 2014.

71. Ministry of Health. 2016-17 Health Budget Analysis. 2016;1–34.

72. Kabia E, Mbau R, Oyando R, Oduor C, Bigogo G, Khagayi S, et al. "We are called the et cetera": Experiences of the poor with health financing reforms that target them in Kenya. Int J Equity Health [Internet]. 2019 Jun 24 [cited 2020 Jul 2];18(1). Available from: https://pubmed.ncbi.nlm.nih.gov/31234940/

73. Tanzania Health Financing Profile. Health Financing Profile - Tanzania. Heal Policy Proj [Internet]. 2016;(May):1–2. Available from: https://www.healthpolicyproject.com/pubs/7887/Tanzania_HFP.pdf

74. Ministry of Health. Ghana Health-Finance-Strategy. 2015;25–8. Available from: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjBoILv9efpAhWJkxQKHdRcAWIQ7gEwDnoECAYQCQ&url=https%3A%2F%2Ftranslate.google.com%2Ftranslate%3Fhl%3Dha%26sl%3Den%26u%3Dhttps%3A%2F%2Fwww.moh.gov.gh%2Fwp-content%2Fuplo

75. Prashad P, Saunders^ D, Dalal A. MOBILE PHONES AND MICROINSURANCE [Internet]. 2013 [cited 2020 Aug 2]. Available from: www.ilo.org/publns

76. Crawford S, Sachdev R. Global analysis of health insurance in Sub-Saharan Africa. 2018.

77. Mtei G, Mulligan J, Ally M, Palmer N, Mills A. An Assessment of the Health Financing System in Tanzania: Implication for Equity and Social Health Insurance. Framework. 2007;(May).

78. Barasa EW, Mwaura N, Rogo K, Andrawes L. Extending voluntary health insurance to the informal sector: Experiences and expectations of the informal sector in Kenya. Wellcome Open Res [Internet]. 2017 [cited 2020 Jul 2];2. Available from: /pmc/articles/PMC5698913/?report=abstract

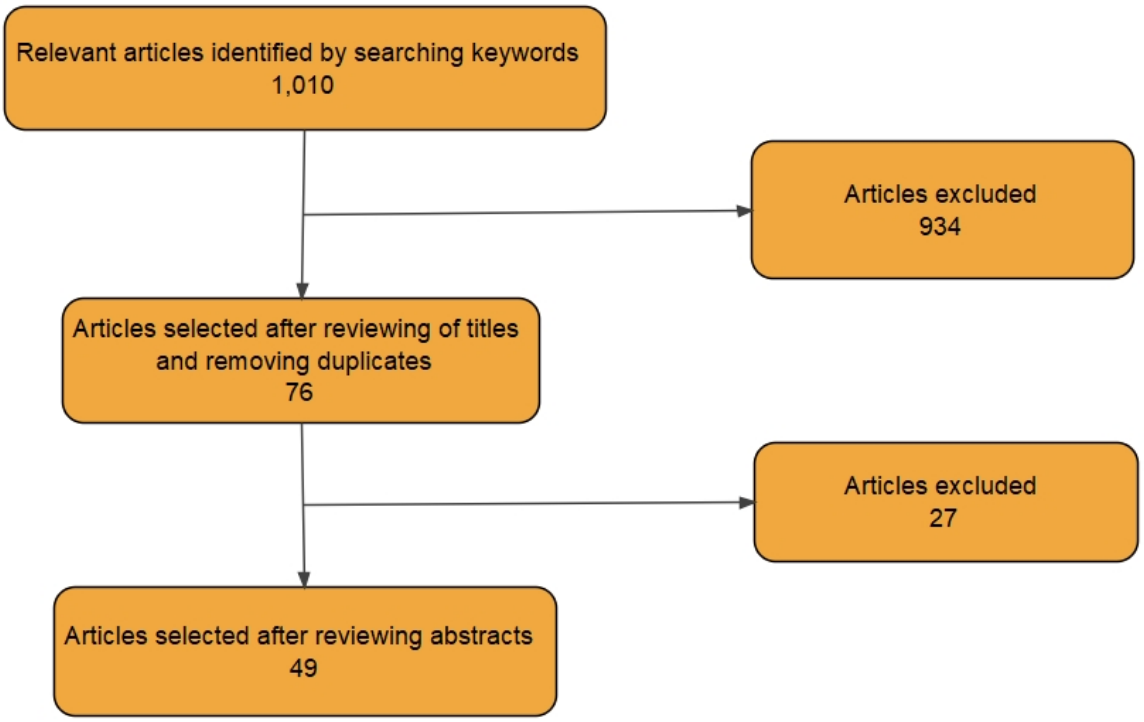
79. World Health Organization. Global Health Expenditure database 1995 - 2010 [Internet]. WHO. 2012 [cited 2020 Jun 4]. Available from: https://apps.who.int/nha/database/Select/Indicators/en

80. Doetinchem O, Carrin G, Evans D. Thinking of introducing social health insurance? Ten questions HEALTH SYSTEMS FINANCING.

81. Wagstaf A. Social Health Insurance vs. Tax-Financed Health Systems—Evidence from the OECD. Magn Reson Chem. 2009;47(3):228–38.

82. Haazen D. Making Health Financing Work for Poor People in Tanzania. Making Health Financing Work for Poor People in Tanzania. 2012.

Annexe I: Search Tree



Annex II: Research Table

Objective	Issues	Methods	Source of data
5. To analyze the differences in characteristics of NHI schemes between the 4 countries:	Prepared schemes Health Insurance Formation, governance, Population coverage, services covered (benefit packages), cost covered (contributions Large informal sector Domestic funding	Literature Search Descriptive Literature Review	Peer reviewed articles Grey literature PubMed Vrije University Library Google scholars Ministry of health Insurance Company World bank World Health organisation
6. Discuss the challenges of NHI encountered in these countries.	With the context of SSA and LMIC Large informal sector Fragmentation Low risk sharing and pooling equity High administrative cost		
7. Discuss the contribution of NHI to current health expenditure.	Proportion of CHE that is NHI (compulsory insurance) in the different countries		
8. Briefly discuss recommendations from the review.	Bring forward Recommendations for countries thinking of starting NHI, like Sierra Leone.		