Financial risk, vulnerability and equity of access to healthcare services in Kenya

Summary

This dissertation is underpinned by the global call to achieve universal health coverage (UHC), including financial risk protection and access to quality healthcare services. Kenya has embraced this commitment in its 2010 constitution, by promising to ensure the right to health for the entire population. The Kenya Health Policy 2014 – 2030 is grounded on the principle of protection of human rights through a focus on equity of access. In addition, UHC is among "the big four" priority areas under the current presidency, which demonstrates the government's commitment and political goodwill to achieving better health for all.

Historically, the Kenyan health system was centralised at the national level, a system that was criticised for its regional discrepancies in healthcare service distribution, disparities in resource allocations and inequitable access to quality healthcare services. These disparities partly informed the "spirit" of devolution as per the constitution of 2010, to among other objectives ensure a more equitable sharing of national and local resources, thus reducing inequities. In 2013 the healthcare system was decentralised to the new governance unit(counties) as part of implementing the constitution. The national level is now responsible for policy formulation, and national referral services, while the county governments are responsible for the implementation of the policy direction and service delivery.

Inequities in access to healthcare services continue to persist in Kenya, with more than one million people pushed into poverty annually due to healthcare payment. Also, only a fifth of the 47 million population has some form of health insurance. Many have limited access to healthcare services due to cost-related barriers, whereas unanticipated risks like economic shocks limit others, even those with the ability to pay for care. While various measures have been used to assess equity of access, there are limitations in using only one measure given that each measure defines a specific perspective. For instance, catastrophic health expenditure (CHE) commonly used to gauge financial risk protection only assesses people who have used healthcare services, but not those who forgo them.

This dissertation, therefore, extends beyond the general measurement of financial risk protection to explore other perspectives of inequity in access. It assesses the extent of socioeconomic inequalities in financial risk protection, explores the cost-related barriers to access healthcare services considering variations across and within the regions (counties), and the influence of shocks on the ability of households to invest in healthcare.

The dissertation utilises two nationally representative datasets to perform these analyses. First, the Kenya Household and Health Utilisation Survey (KHHEUS) data (2007 and 2013) is used to analyse the socioeconomic inequalities in catastrophic health expenditure and the cost-related unmet need for healthcare services. The KHHEUS is a cross-sectional survey with data collected by the Ministry of Health and the Kenya

National Bureau of Statistics (KNBS). Second, to analyse household shocks, the dissertation utilises data from the 2015/2016 Kenya Integrated Household Budget Survey (KIHBS), which is implemented by the KNBS under the Kenya Statistics Programme for Results (KSPforR) project.

To respond to the main aim, this dissertation answers the following four key questions:

1. What is the extent, variation and the underlying determinants of CHE across Sub-Saharan Africa (SSA) countries?
2. What is the extent of socioeconomic inequalities in CHE, the associated determinants and the changes over time in Kenya?
3. Do sub-region variations influence the unmet need for healthcare services due to cost barriers?
4. What is the effect of household shocks on the utilisation of healthcare services in Kenya?

Overall, the dissertation is organised into an introductory chapter, four main chapters that comprehensively address the four questions and a concluding chapter that summarises the findings and provides implications for future policy and research. The chapters are summarised as follows:

Chapter 1 introduces the dissertation and provides a background on the areas of interest, based on the existing literature. Further, this chapter presents the rationale of the research considering global, regional and country-level priorities. The context and history of the healthcare system and financing in Kenya, which forms the basis for this study, is also discussed in this chapter. The main aim of the research and the research questions are also described, including the methodological approaches applied to respond to each of the questions.

Chapter 2 of the dissertation seeks to provide a broader regional outlook on financial risk protection in SSA from which Kenya can benchmark, gauge its performance and draw lessons from other countries' experiences. It aims, therefore, to explore the extent of CHE across the various SSA countries and the underlying determinants of CHE, including the reported impoverishment rates due to healthcare payments. To address this aim, the chapter applies a systematic scoping review approach guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) tool that provides key items considered essential for systematic review and meta-analysis reporting. The review searched for articles indexed in various databases including PubMed, EBSCO (EconLit, PsycINFO, CINAHL), Web of Science and JSTOR. In addition, grey literature from WHO and the World Bank virtual libraries was identified to complement the database searches. The outcome of interest was the incidence of catastrophic health expenditure, while the secondary outcomes were the determinants and the proportion of households impoverished. To ensure the robustness of the studies included in the review, the quality assessment tool for observational cohort and cross-

sectional studies was applied to evaluate the quality. Finally, 34 studies from across 17 SSA countries met the inclusion criteria and the quality assessment for the full review.

Overall, the analyses showed a higher CHE incidence among countries in the West African region in comparison to other regions. However, this could be due to the use of convenient sampling of pre-selected population groups, unlike nationally representative samples used in other countries. Type of illness and household head characteristics such as age, gender, age group, education level and employment status were seen as key determinants of CHE. Other determinants of CHE included households' characteristics such as health insurance status, size, economic status, rural-urban location, presence of elderly and under-five children and type of health provider where care was sought. Interestingly, formal health insurance status was associated with both lower odds and higher odds of experiencing CHE, while in some studies, insurance was not a significant determinant of CHE. This was mainly due to the relatively low uptake of health insurance across SSA countries. However, informal networks and mutual organisations were seen as key determinants in reducing the incidence of CHE, emphasising the significant role of informal networks in cushioning financial hardship.

These results underscore the pervasiveness and rising incidence of CHE in many SSA countries over time. Impoverishment was also seen to vary widely across the countries. In accordance with the findings from this chapter, the main recommendation was to intensify insurance uptake to reach the underserved, but more importantly, to leverage and draw innovations from mutual or informal networks to increase insurance coverage. In addition, there is a need to draw synergies and efficiencies in financing across disease areas as some illnesses were associated with higher costs than others.

Although both the rich and poor were observed to experience catastrophic costs, poor households were most at risk. This points to the existence of disparities in CHE among these socioeconomic groups. However, the majority of the studies reviewed did not assess the inequalities, and even the few that did failed to examine the drivers of inequalities in CHE and, more importantly, the changes over time. In light of this, **Chapter 3** responds to the second question regarding the extent of socioeconomic inequalities in CHE, the associated determinants and the changes over time in Kenya. Using KHHEUS data from 2007 and 2013, this chapter assesses the inequalities in CHE across the socioeconomic groups and the drivers that sustain these inequalities. The concentration index is used to measure the socioeconomic inequality in CHE. Households are classified into socioeconomic quintiles using per capita consumption expenditure. The concentration index of CHE is then decomposed into its determinants to assess the relative contribution of its covariates. Finally, an Oaxaca-type decomposition of the change in a concentration index is applied to assess the changes in CHE inequalities over time.

The findings show that the incidence of CHE has declined over the years, with the rich experiencing a relatively higher decline than the poor. However, the inequality in CHE has increased over time and is disproportionately concentrated amongst the less

well-off. Household head employment status and wealth status of the household were seen as the main contributors to inequalities in CHE. Furthermore, insurance status of the household was seen to have a minimal significant effect, perhaps due to the small proportion of households that were insured, coupled with a limited insurance package. However, this points to the critical role of insurance in cushioning populations against the financial burden of ill health.

The changes in the elasticities and inequalities of the socioeconomic determinants explained the changes in the inequalities over time. Elasticities in the household economic status was the main contributor to the change (increase) in CHE inequality over time. These findings emphasise the existence of socioeconomic inequalities that disadvantage the poor in Kenya, suggesting that the mechanisms in place offer inadequate financial protection for the poor and vulnerable. Findings from this chapter lead to recommendations for a crucial multisectoral approach to address existing socioeconomic inequalities and hence, accelerate the achievement of equity in access to healthcare services.

While CHE is a robust measure of financial risk protection, it is based on out-of-pocket payments; hence, it only assesses those individuals who seek healthcare services and not those who refrain from seeking care. Therefore, it is a limited measure for the overall healthcare protection of the entire population. For this reason, and to understand the financial protection for the wider population, it is important to consider those who refrain from seeking care. In this regard, **Chapter 4** assesses the cost-related unmet need for healthcare services confounding for variations across the country's regions (counties). Kenya decentralised the healthcare system to the counties, that are now charged with the direct implementation of the policy directives and service delivery. However, these counties vary by socioeconomic profiles and health indicators. Therefore, assessing the regional variations in the unmet need for care can inform the prioritisation of healthcare services in counties that are lagging behind.

Using KHHEUS 2013 data, this dissertation assessed the cost-related unmet need for healthcare services. Self-reported unmet need due to lack of money and high costs of care was used to compute the outcome of interest. A multilevel regression model was applied to explore the factors associated with the cost-related unmet need, factoring the variations across the counties. The results indicate that variations exist across counties with the unmet need being relatively high among inpatient services as compared to outpatient services. The difference at the county level contributed to the variations in the cost-related unmet need for healthcare services. Factors that contribute to higher odds of the cost-related unmet need included older household members, urban residence, inpatient services and lower wealth quintiles. In contrast, factors that contributed to reducing the odds of the cost-related unmet need included education level of household head, good self-rated health, larger household size, insured households and higher wealth quintiles.

The multilevel model significantly improved the measure for the cost-related unmet need controlling for the effect of county-level variations. The differences at the county level are seen to significantly contribute to the varying rates of the cost-related unmet need. This points to the differences in socioeconomic profiles in the counties that predispose households to varying health-seeking behaviours. Therefore, a multi-layered approach is paramount to addressing variations in the unmet need, as it helps to contextualise and prioritise policy factors or decisions that are relevant at the individual, community or regional level as well as the national level.

Finally, this chapter underscores that the ability to pay is key to enabling access to healthcare services. However, the household's ability to invest in healthcare services could be limited by unanticipated risks. Thus, **Chapter 5**, explores the impact of households' shocks on the utilisation of healthcare services. This is important to understand as financial setbacks can disrupt the household's economic status, even those with relatively high incomes. Financial shocks due to unforeseen expenses and income losses may cause immediate strain making it more challenging to build or rebuild a financial cushion.

The study utilises the KIHBS 2015/2016, which is the first survey in Kenya to collect comprehensive data on shocks from the households. It therefore examines the impact of household shocks on the utilisation of healthcare services. A propensity score matching approach is used to construct a quasi-experimental design adjusting for selection bias of households that experienced shocks.

The results indicate that overall, shocks reduce the probability of utilising healthcare services when households are confronted with an illness. Multiple shocks in a household were seen to exacerbate the risk of not seeking healthcare services when needed, with a higher negative effect on the utilisation of healthcare services compared to households that experienced one shock. Overall, asset shocks reduced the probability of seeking healthcare services, while due to the smoothing out of income shocks through the sale of assets and borrowing, income shocks had no significant influence on the utilisation of healthcare services. The negative effect of asset shocks increased as the time to illness reduced. This is because a more profound effect on a financial constrained household's decision to seek care is expected for shocks that may occur closer to the time of the illness. Conversely, assets are often used to cushion economic shocks by either selling or using them as collateral for borrowing more assets.

The findings underscore that shocks may limit the capacity of households to afford and access healthcare services when needed. This calls for broadening of social protection programs to integrate mechanisms that can enable households to build resilience to shocks, while cushioning them from financial hardships. Also, there is a need to expedite the expansion of other measures that offer financial protection to households when seeking healthcare services, such as health insurance schemes. This would ultimately cushion households from forgoing care due to costs, especially the poor and vulnerable ones, even when confronted with unanticipated risks.

Finally, **Chapter 6** summarises the cross-cutting discussions and conclusions from all of the chapters into five key statements, including implications for future policy and research. The main findings are summarised as follows:

- ***Statement 1:*** *The poor are the most vulnerable to catastrophic payments, yet they are least protected from the financial burden imposed by healthcare costs.*

A consistent finding across the chapters of this dissertation was that the poor are most burdened by healthcare costs given that even a small amount of payment could turn catastrophic. A significant number of individuals, particularly the poor, do not access care due to cost-related barriers. This means that the existing risk protection mechanisms have not been sufficient to provide a cushion to economically vulnerable groups. For instance, the coverage by the National Hospital Insurance Fund(NHIF) is based on a premium, which is still unaffordable to the poor. Furthermore, the results show that the inequalities in catastrophic payments between the poor and well-off have increased over time. This points to the need to further understand and address the drivers of socioeconomic inequalities to improve pro-poor policy interventions. These results underscore the vital role of financial risk protection in gaining entry into the healthcare system and therefore, influence equity of access to healthcare services.

- ***Statement 2:*** *Disparities in financial risk protection allude to the existence of inequities within various levels of the healthcare delivery system.*

This dissertation not only observed disparities in financial risk protection across various groups, but also various regions. These disparities are a reflection of the significant inequities that exist within the healthcare delivery system. Furthermore, Kenya has witnessed an upsurge of private healthcare services, which are prohibitive in costs as many wealthier households seek better quality care. This emphasises that access to healthcare services is influenced by the interplay between system-level and individual/household-level factors. Evidence shows that these system-level inequities may include a shortage of healthcare workers, inadequate healthcare facilities, long distances to health facilities, shortage of medical supplies as well as limited insurance coverage. This points to the importance of strengthening system-level factors alongside mechanisms for better financial protection to catalyse the achievement of equity in access to healthcare services.

- ***Statement 3:*** *While formal health insurance is a necessary and essential factor in improving access to healthcare services in Kenya, it is not sufficient on its own.*

Evidence provided in this dissertation shows that formal insurance is a key component to improving equity of access through the improvement of financial risk protection. Household insurance status is seen to be associated with a reduction in socioeconomic inequalities related to CHE. Again, the dissertation observed the reducing effect of insured households on the cost-related unmet need for healthcare services. However, evidence has uncovered the existence of inequalities in insurance coverage, mainly because formal insurance is based on a premium, limiting the ability of the economically disadvantaged to pay. Also, there are psycho-social barriers associated

with insurance uptake even when premiums are relatively low, mainly centred on individual risk-preferences, trust and perceived health status. This dissertation also notes that non-medical costs, such as transport costs, that are not covered by health insurance significantly contributed to catastrophic payments. Hence, there is a need to devise financial mechanisms that provide protection beyond medical costs. Considering that the majority of the population in Kenya and the region is working informally, there is a growing need to explore innovative approaches through informal networks and mutual organisations that are more contextual in pooling finances and offer financial cushions to the less well-off.

- ***Statement 4:*** *Vulnerability to shocks limits financially unprotected households' ability to invest in healthcare and other welfare services.*

This statement points to the need for collaboration across sectors, and beyond that of health, to address socioeconomic factors that influence the uptake of healthcare services. The evidence in this dissertation shows that rich-poor inequalities, regional disparities and household risks exacerbate inequities in access. Given that some of the drivers of inequities in access extend beyond the healthcare sector, this implies that policies in health systems are fundamentally required to be complemented through other relevant sector mechanisms. For instance, investments in social protection mechanisms would substantially improve financial risk protection among economically disadvantaged households. Although Kenya has made significant progress in putting in place social protection mechanisms, they are limited in coverage due to minimal government investment. Finally, this statement calls for the need to draw efficiencies and synergies across various sectors to accelerate the achievement of equity of access and subsequently, UHC.

- ***Statement 5:*** *Application of multiple dimensions to measure equity provides a more holistic and nuanced view on equity of access to healthcare services.*

A novel contribution of this research was the application of different measures to assess different perspectives of equity in access to healthcare services. While there are various approaches to measure equity of access, this dissertation combined the measures to reflect various perspectives in order to assess equity in access to healthcare services. In addition, it moved beyond just measures of risk protection to the disparities, their drivers and associated risks. For instance, while CHE and its inequalities in Kenya have been assessed to a certain extent, this dissertation is the first to focus on the determinants of inequalities and their changes over time. Furthermore, it also assesses those who refrain from accessing care due to a lack of risk protection and the risks that limit households to access healthcare. Assessing the various perspectives of equity in access may provide detailed evidence on the existing disparities that could then inform better-targeted policy decisions.

This dissertation has some limitations that need to be considered when interpreting the findings. These limitations suggest areas that could inform further

research on the expansion of the evidence on equity in access to healthcare services in SSA. These include the following:

1. The study used cross-sectional data which is limited in providing depth in analysing data over time. Furthermore, panel data are better suited for this kind of analyses. Hence, future studies would be more beneficial if they provide time series analysis using panel data.
2. This study focused on the demand side of the healthcare system. Although the supply side does influence access to healthcare services, this study was only concerned with individual/household direct access or non-access to healthcare services. Nonetheless, the results hint to the existence of inequities within the supply side of the healthcare system. Hence, further research could consider examining the system-level inequities within the healthcare system that limit access to care and services.
3. The results analysed in this dissertation are based on self-reported healthcare needs and costs by the respondents. This could be subjective given that different individuals have varying perceptions of their healthcare needs, and that healthcare behaviour is complex across different socioeconomic groups. This calls for further research to explore direct causal pathways to access, but also to explore qualitative methodologies to analyse behavioural aspects.

Although the empirical chapters are specific to Kenya, they provide evidence that can be applied and replicated in other countries in SSA. The policy implications derived from the findings of this dissertation include the following:

- Increase investments in healthcare services and social protection measures to reduce reliance on out-of-pocket payments.

Currently, only 6% of the GDP is allocated to healthcare with OOPs accounting for a third of the health expenditure. Thus, the government needs to mobilise additional resources through counties own resource revenues, and to expand the national insurance coverage to the informal sector with the ability to pay. This would contribute to increase the resource base for investments in the healthcare system, subsequently contributing to improvements in financial risk protection, especially for the most vulnerable.

- Optimise the decentralised healthcare system through better coordination between national and county governments.

This would help to prioritise counties that are lagging behind and hence, reduce disparities across the counties. In addition, the government should fundamentally consider prioritisation of counties based on their needs rather than the performance of specific services, as is the case with the county-level equalisation fund.

- Leverage the informal and mutual networks that are common and contextual in countries that have a large informal workforce, such as Kenya.

Although formal insurance is vital to improving access, such a policy can be achieved through the establishment of collective-based insurance packages for these mutual networks to expand insurance coverage and thus, improve financial risk protection. Also, the government needs to put in place robust mechanisms that allow for the integration of these mutual organisations and informal networks into the broader health financing systems.

- A multisectoral approach is vital to addressing the socioeconomic inequalities and potential financial risks.

Mechanisms for addressing inequity should not only focus on reducing the direct effects of the determinants. Furthermore, the drivers of inequalities in financial risk like employment and economic status of the household extend beyond the health sector. This requires a wider collaboration and synergies across various government institutions and stakeholders so as to draw possible efficiencies and maximise impact.

In conclusion, this dissertation has assessed more than one perspective of equity in access to healthcare services by applying different measures. It adds to the knowledge and evidence on equity of access by going beyond simply exploring the measures of financial risk protection. This is achieved by examining the socioeconomic inequalities in CHE, the drivers that sustain the inequalities, the effect of variations across Kenyan regions and the risks that may limit households from utilising healthcare services.

Overall, the dissertation underscores the role of financial risk protection as a pathway to achieving equity of access. It emphasises the importance of applying a multisectoral approach to comprehensively address both system- and individual-level factors to achieve equity of access to healthcare services. The recommendations also point to increasing investments in healthcare, as well as social protection to address risks and socioeconomic inequalities that may limit the achievement of UHC in Kenya. In general, for countries such as Kenya, that are challenged with devising mechanisms for equity in access, it calls for a rethinking of the health financing structures and policies that could then provide more equitable access, especially among the poor and most vulnerable.