NATIONAL HOSPITAL INSURANCE FUND'S PURCHASING MECHANISM AND ACCESS TO PRIMARY CARE HEALTH SERVICES IN KENYA

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DECLARATION AND RECOMMENDATION

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"This thesis is my original work and has not been presented for a degree or any other award in any other University."

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DEDICATION

To family; Isaac, Theresia, Luke, Larry, Lashawn, Triza, Esther, Mary, Lucy, Grace, and Samson, you have all been a pillar to my success, God Bless.

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ABSTRACT

Health care financing (HCF) is one of the six building blocks of a health system. Kenya envisions having Universal Health Coverage (UHC) by 2022. In order to achieve this Kenya has identified and settled on National Hospital Insurance Fund (NHIF) as a vehicle towards the realization of UHC. UHC is one of the country's "Big-four" agendas. NHIF is Kenya's sole social insurer which collects revenue, pools and purchases health services for its members. Purchasing can be passive or strategic, for health systems to be responsive and financially fair, strategic purchasing is the way to go. NHIF is currently undertaking strategic purchasing of primary care health services (PCHS) through capitation. Strategic purchasing should guarantee access to quality, equity and financial risk protection. Despite strategic purchasing, access to PCHS still remains a challenge, with patients still lacking drugs and paying for services. Strategic purchasing requires the purchaser to engage actively in three main relationships: with Government, with healthcare providers, and with the citizens. The aim of this study was to assess the effect of NHIF purchasing mechanisms on access to PCHS for its members. To meet this aim the study focused on determining how citizens' engagement, providers' responsibility and County government's role affect access to NHIF s' PCHS. This was a descriptive cross sectional study. Data was collected from Nakuru and Nyandarua counties, using semi structured questionnaires, from 395 patients, from 66 NHIF accredited health facilities, and from 115 county health management team members. Results obtained from logistics regression analysis of citizen engagement factors and access, indicate that NHIF communication to citizens ($p < 0.05$, OR=2.4, 95% CI [1.4-4.0]), purchaser accountability ($p<0.05$, OR=2.07, 95% CI [1.02-4.23] and provider choice ($p<0.05$, OR=2.99, 95% CI [1.82-4.92) had a significant association with access. Under providers responsibility, monitoring provider performance ($p<0.05$, OR=31.25, 95% CI [1.58-620.05] had a significant association with access, while analysis of the County government's role indicate that only the constant was significant while other variables such as communication by NHIF, guidelines for National scheme implementation, adequacy of capitation funds and county health facility infrastructure had no significant association with access to PCHS. In conclusion, citizen are partially engaged by NHIF as this study demonstrates that the citizens received communication from NHIF, and knew how to select a provider, however citizens 'views and values were not accounted for in NHIF decision making. The providers were undertaking their responsibility as long as the monitoring mechanisms by the NHIF and the county government are in place, however monitoring of performance by NHIF was inadequate. The County health department role was not felt in NHIF purchasing of PCHS, thus this may hinder access of citizens to PCHS. The effectiveness of strategic purchasing of the NHIF National scheme should be based on the successful implementation and effective collaboration of all stakeholders. There is need to raise awareness of the strategic purchasing function in order to promote a shared understanding which will enrich knowledge of the roles and responsibilities of all the players including the County and National governments, NHIF, Citizens and providers, thus improving on access to health services.

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ABBREVIATIONS AND ACRONYMS

CBHI	Community Based Health Insurance
CHMT	County Health Management Team
HCP	Health Care Provider
KeMU	Kenya Methodist University
MoH	Ministry of Health
NACOSTI	National Council of Science and Technology
NHI	National Health Insurance
NHIF	National Hospital Insurance Fund
NHS	National Health Services
OR	Odds Ratio
PCHS	Primary Care Health Services
PHI	Private Health Insurance
SCHMT	Sub County Health Management Team
SERC	Scientific and Ethics Review committee
SHI	Social Health Insurance
SPSS	Statistical Package for the Social Science
UHC	Universal Health Coverage
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background Information

Health systems consist of all persons and activities whose principal intent is to promote, restore or maintain health, World Health Organization (WHO, 2000). The World health report of 2000 defined overall health system outcomes or goals as: improving health and health equities, in ways that are responsive and financially fair, and making the best use of available resources. In order to achieve their goals, all health systems must carry out some basic functions. These functions are further redefined as six essential building blocks of a health system. The building blocks are: service delivery; health workforce; information; medical products, vaccines and technologies; financing; and leadership and governance (stewardship), (WHO, 2007). In addition to the six pillars, Kenya has further identified two more building blocks, these are infrastructure and research and development, (Ministry of Health, 2014).

The focus of this study was the health financing building block with an emphasis on purchasing of primary care health service under the National Hospital Insurance Fund (NHIF) National scheme. Health financing function has three inter-related functions - revenue collection, risk/fund pooling, and purchasing/provision of services" (WHO, 2000). This study focused on the purchasing function to understand the extent to which the citizens are protected from financial impoverishment associated with access to primary care health services under NHIF National Scheme given the underlying purchasing mechanism. Primary Health Care, is the foundation of a health care system, it is the act of providing as much care as possible at the first point of heath care, (WHO,

2007). Universal access is one of the principles of primary health care, and is also an intermediate goal of all health systems others are coverage, quality and safety. Access to primary care health services is still a global challenge.

Purchasing is the process by which a purchaser allocates funds to healthcare providers to provide services to an identified group of people for example members of an insurance scheme or the whole population, (Munge, Mulupi, Barasa, & Chuma, 2017). According to (Evans, Hsu, & Boerma, 2013), there are three main ways to purchase: one is where government advances money to its own health service providers based on budgets (integration of purchasing and provision of services) through government revenues, taxes and or insurance contributions; secondly separate purchasing agent such as a health insurer or government authority purchasing services on behalf of a population referred to as purchaser-provider split; and thirdly is individuals paying providers directly for services. Five purchasers are identifiable in the Kenyan health financing system: households, the government (national and county), National Hospital Insurance Fund, Private Health Insurance (PHI), and Community Based Health Insurances (CBHIs), (Munge, Mulupi, & Chuma, 2015). Many countries use a combination of purchasing methods to provide healthcare services to its population. Purchasing should not be confused with procurement, which generally only refers to buying medicines and other medical supplies (Kutzin, 2001).

The World Health Report of 2000 differentiates between passive and strategic purchasing: Passive purchasing entails paying bills or advancing funds based on a predetermined budget, while strategic purchasing involves determining the health interventions to purchase taking into account populations 'needs and preferences,

taking into consideration the country's health priorities and cost and research based effective measure, secondly determining how to purchase services, including contracting and provider payment systems, thirdly, determining from which providers services ought to be purchased from bearing in mind quality levels and efficiency. For health systems to be responsive and financially fair, then strategic purchasing should be the direction to go.

Globally, Many countries have tried to introduce an active purchasing role within their public health systems, for example United Kingdom, Netherland, and Chile (World Health Report, 2000). Strategic purchasing can enhance progress towards universal health coverage (UHC) by using mechanisms that promote equity, quality, efficiency, effective and responsiveness in health service delivery (Munge et al., 2015).

The commitment of Kenyan Government towards financing of the health sector can be demonstrated by increased budgetary allocations from KES.15.4 billion in 2002/2003 to KES.74 billion in 2012/2013 to the health sector in absolute terms (Okech, 2016). In 2015/2016, KES.59 billion was allocated to the national Ministry of Health (MOH), while KES.85 billion was allocated by the county governments to the County Health Department (Mbau et al., 2018). Though financial allocations show an upward trend, the MOH reports continue to reveal that patients are still paying out of pocket, thus challenging access to health services (Okech, 2016).

The Government of Kenya (GoK) is committed towards achieving Universal Health Coverage, as a means of realizing the right to health as enshrined in the Constitution of Kenya 2010 and Vision 2030 (Munge et al., 2015). Universal Health Coverage is one

of the Country's big four agendas to be achieved by 2022. In order to enhance access to health care as a step towards UHC, the government has identified NHIF as a means to this end. NHIF is the sole social health insurer in Kenya, and has been in existence since 1966.

NHIF has various Health insurance products, however the focus of this study was the outpatient/primary care health services under NHIF National scheme. The scheme commenced out-patient services in July 2015. The outpatient National Scheme is affordable and all-inclusive with no exclusions for all medical conditions except cosmetic procedures; no upper age limit for members to join; and no limitation on the number of declared dependents, (NHIF, 2019). Under NHIF National scheme three categories of membership have been identified as Formal, Informal and Indigents/Sponsored. Monthly contributions rates (family cover) have also been varied with the formal sector being on a graduated scale ranging from KES.150 to KES.1,700. Informal sector contributions have been pegged at KES.500 per month, while the sponsored category has been set at KES.300 per month. In terms of membership, members are required to register with the scheme and declare their preferred facility of choice including their declared dependents for capitation purposes. As a social insurer, NHIF is mandated to provide access to quality and affordable health care for all Kenyans. NHIF collects revenue, pools and purchases health services for its members. As a purchaser, the NHIF conducts some form of 'strategic' purchasing by accrediting and contracting public and private health providers country wide for a defined benefit package, payment to providers is through capitation for outpatient services. Access to out-patient services forms the entry point, while in patient services

are provided on referral from an outpatient case, though some can occur on demand based on level of care requirements (Okech & Lelegwe, 2016).

Capitation offers incentives for prevention and cost control, as long as the provider receiving capitation can benefit from both. Capitation helps prevent the cost inflation experienced with fee for services payment (Ainsworth, Beyrer, & Soucat, 2003). Traditional capitation payment may save on expenditure however it offers little incentive in promoting high quality care and may instead create incentives for unnecessary saving on essential services (Cashin, 2014).

As Kenya strives to move toward universal access to primary care health services, it is necessary to look at how purchasing function is organized within NHIF. According to Tangcharoensathien et al., (2015), if strategic purchasing function is well managed, it contributes to achieving UHC goals of equity and financial risk protection. This study focused on the purchasing mechanism by NHIF and the effect it has on access to primary care health services in Kenya.

1.2 Statement of the Problem

The Government of Kenya is committed towards achieving UHC, as a means of realizing the right to health as enshrined in the Constitution of Kenya 2010 and Vision 2030 (Munge et al., 2015). Universal Health Coverage is one of the Country's big four agendas to be achieved by 2022. In order to enhance access to health care as a step towards UHC, the government has identified NHIF as a means to this end. Through a joint assessment between the World Bank and the Kenya Government, NHIF was

found to have the organization capacity to undertake this task, (Mwaura, Rogo, Ramana, Barasa, & Coarasa, 2015).

Between 1998 and April 1st 2015, compulsory contribution to the NHIF was restricted to persons earning a minimum monthly salary of KES.1,000 with premiums rising with increasing gross income up to a cap set for those earning KES.15,000 and above (NHIF, 2015). Most formal sector workers were contributing a maximum premium of KES.320 per month. On April 1st 2015, the minimum salary from which contributions was required was raised from KES.1,000 to KES.5,999 (contributing KES.150 each month), while the top contribution of KES.1,700 was required from those earning more than or equal to KES 100,000 (Republic of Kenya, 2015), increasing premium contributions fivefold. Contributions from the informal sector were increased from KES.160 to KES.500 per household, per month. Accompanying this change in contributions was an enhanced benefit package which includes outpatient care/primary care health services and other services such as health promotion and disease screening, (NHIF, 2015). NHIF membership has similarly shown considerable increase from 2,925,142 in the year 2010/2011 to 5,187,480 in the year 2014/2015, (Okech, 2016).

With premium contributions increasing up by fivefold it can be implied that revenue collection and pooling of funds have improved. However, despite the increase in enrolment and contribution, access to primary care services still remains a challenge for those enrolled, hence raising the need to determine how the funds collected and pooled are utilized for purchasing health services. NHIF has been reported to have persistent accumulation of huge surpluses as indicated by the payout ratio, for example, in 2014/2015, out of KES.14 billion revenue, only KES.6.4 billion was paid out to

health care providers. This has been primarily attributed to health access issues of low-utilization of services by patients, narrowly designed benefit package/citizen entitlements, public health providers lacking incentives to seek reimbursements for NHIF claims, high cost of operation, structural bureaucracies and poor stewardship and governance, (Okech & Lelegwe, 2016).

NHIF purchasing is by contracting public and private health service providers, to provide ambulatory services on capitation basis. However, despite these purchasing mechanisms, cases of NHIF members paying for health services at the point of care continue to be reported. If NHIF purchasing mechanism is to be determined, there is need to evaluate it against strategic purchasing, which is one of the key policy instruments that are used to achieve the UHC goals of improved and equitable access and financial risk protection. Strategic purchasing through capitation requires the purchaser to engage actively in three main relationships: with Government both county and national (Ministry of Health), with healthcare providers, and with the citizens (Tangcharoensathien et al., 2015). The focus of this study was therefore to assess the effect of NHIF's purchasing mechanism on access to primary care health services, with an aim of assessing the relationship of the purchaser-NHIF and stakeholders (citizens, providers and the county government), this is because though studies have focused on strategic purchasing, the effect of purchasing mechanism on access to primary care health services is not known.

1.3 Purpose of the Study

The aim of this study was to assess the effects of National Hospital Insurance Fund's purchasing mechanism on access to primary care health services for the National

scheme members, in Kenya, with a focus on two counties. Results of this study formed a basis for development of a theoretical model of strategic purchasing of primary care health services under the NHIF National Scheme.

1.4 Study Objectives

This study was guided by the following objectives:

i. To determine the effect of citizens' engagement on access to primary care health services under the NHIF National Scheme.
ii. To assess the effect of implementation of health care providers' responsibilities on access to primary care health services under the NHIF National Scheme.
iii. To determine the effect of implementation of County Government's role on access to primary care health services health under the NHIF National Scheme.
iv. To determine the moderating effect of communication on citizen engagement, provider responsibility and County Government role in purchasing of primary care health services health under the NHIF National Scheme.

The first three objectives on citizen engagement, health care provider responsibilities and County Government's role were further expounded by stating the specific aims of each objective.

1.4.1 Effect of citizens' engagement on access to primary care health services under the NHIF National Scheme

i. To determine the influence that knowledge of benefits package has on access to primary care health services under the NHIF National Scheme.

ii. To identify the influence that NHIF communication to the citizens has on access to primary care health services under the NHIF National Scheme.

iii. To determine the influence that ascertaining citizen's views and values, has on access to primary care health services under the NHIF National Scheme.

iv. To identify the influence that NHIF accountability to citizens has on access to primary care health services under the NHIF National Scheme.

v. To determine the effect of choice of primary provider, on access to primary care health services under the NHIF National Scheme.

1.4.2 Effect of implementation of health care providers' responsibilities on access to primary care health services under the NHIF National Scheme.

i. To determine the effect of NHIF Communication to primary care provider on access to primary care health services under the NHIF National Scheme.

ii. To determine the effect that NHIF Accreditation of provider has on access to primary care health services under the NHIF National Scheme.

iii. To establish the influence that, provider services contract has, on access to primary care health services under the NHIF National Scheme.

iv. To assess the effect of provider payment on access to primary care health services under the NHIF National Scheme.

v. To identify the effect that monitoring of primary provider performance has, on access to primary care health services under the NHIF National Scheme.

1.4.3 Effect of implementation of County Government's role on access to primary care health services health under the NHIF National Scheme.

i. To measure the effect of NHIF communication to County Health Management, on access to primary care health services under the NHIF National Scheme.

ii. To determine the effect of guidelines on implementation of NHIF Primary Care Services, on access to primary care health services under the NHIF National Scheme.

iii. To identify the effect of county health facility infrastructure, on access to primary care health services under the NHIF National Scheme.

iv. To determine the effect of financial resources adequacy, on access to primary care health services under the NHIF National Scheme.

v. To assess the effect NHIF accountability to County Health Management has on access to primary care health services under the NHIF National Scheme.

1.5 Research Hypothesis

i. H_{oi}: Citizens engagement has no significant effect on access to primary care health services under the NHIF National Scheme.

H_{1i}: Citizens engagement has a significant effect on access to primary care health services under the NHIF National Scheme.

ii. $H_{0ii:}$ Implementation of Health care provider's responsibilities has no significant effect on access to primary care health services under the NHIF National Scheme.

$H_{1ii:}$ Implementation of Health care provider's responsibilities has a significant effect on access to primary care health services under the NHIF National Scheme.

iii. $H_{0iii:}$ Implementation of County Government's role has no significant effect on access to primary care health services under the NHIF National Scheme.

$H_{1iii:}$ Implementation of County Government's role has a significant effect on access to primary care health services under the NHIF National Scheme.

iv. $H_{0iv:}$ Communication has no moderating effect on citizen engagement, provider responsibility and County Government role in purchasing of primary care health services health under the NHIF National Scheme.

$H_{1iv:}$ Communication has a moderating effect on citizen engagement, provider responsibility and County Government role in purchasing of primary care health services health under the NHIF National Scheme.

1.6 Justification of the Study

NHIF has three functions namely revenue collection, pooling and purchasing. Since 1st April, 2015 there has been an increase in NHIF contribution and membership, however cases of NHIF members paying for health services at the point of care continue to be reported, justifying the need to assess how NHIF purchasing mechanism is organized.

This study focus was on purchasing mechanisms by NHIF. Other purchasers within the Kenyan health financing system are households, the government (national and county), PHI and CBHIs. However NHIF has been identified as one of the organizations that will purchase health care services for Kenyans under UHC reforms, (Munge et al., 2015). Focus on NHIF is justified by the fact that NHIF insures more than 15% of Kenya's total population which is about 88.4% of 17% of persons with health insurance in Kenya. Private insurance covers 9.4 %, community-based insurance 1.3 %, and other forms of insurance covers 1.0 %, of 17% of people in Kenya with health insurance (Kenya National Bureau of Statistics, 2016). Further about 8 in 10 Kenyans do not have any insurance coverage. This implies that the burden of health financing still rests on the public, with health care still being financed out of pocket. This may lead to

financial catastrophe and therefore inhibiting attainment of vision 2030 and Sustainable Development Goals which are dependent on a healthy nation.

NHIF being the only social health insurer in Kenya has made strides to meet the criteria of prepayment and pooling of resources and risks which are basic principles in financial-risk protection. This is in line with the Fifty-eighth World Health Assembly resolutions on sustainable health financing, UHC and social insurance. There is therefore need to assess how NHIF purchasing mechanism is organized, since purchasing creates a link between pooled funds and effective services. If any country is going to achieve universal access, they ought to move from passive to active/strategic purchasing. Strategic purchasing aims to increase health systems' performance through effective allocation of financial resources to providers (World Health Organization, 2016).

1.7 Limitations and Delimitations of the Study

1.7.1 Limitations of the Study

The concept of strategic purchasing of health care services is a key functions of health financing, and is a relatively new concept in Kenya and therefore most respondents found it difficult to conceptualize it. This was overcome by sensitizing the respondents before data collection commenced.

1.7.2 Delimitations

This denotes the scope of the study. The National Hospital Insurance fund collects revenue, pools risks and purchases health services. The scope of this study was purchasing health services. Purchasing means paying health care providers for provision of services. Purchasing can be passive or strategic. Passive purchasing means paying for bills or invoices or extending money to purchase health services using a budget. Strategic purchasing is determining the services to purchase, how to purchase and from which provider you are going to purchase from. The scope of this study was strategic purchasing by NHIF.

The NHIF National scheme offers several benefits including maternity services, primary care health services and surgical packages. This study was limited to NHIF National scheme primary care health services. These services are purchased from accredited public, private and faith based health facilities in all 47 counties in Kenya. NHIF uses Capitation as the provider payment method for the primary care services. Health services in Kenya have been devolved, and therefore the role of the County Health Department is to ensure that quality health services are delivered, including the NHIF primary care health services.

Capitation is a strategic purchasing model, four key players must work together under strategic purchasing to ensure that the primary care health services are delivered, these are NHIF the purchaser, the health care providers, the government and the citizens. This study focused on three of these stakeholders; citizens, health care providers and the county government. The study found it necessary to establish the extent of engagement of the three parties in decision making by NHIF the purchaser. The health care providers included in this study were those who were enlisted by NHIF to provide primary care health services. The citizens were represented by patients found at the sampled NHIF accredited health facilities. The providers and the patients were drawn from two counties, Nakuru and Nyandarua Counties.

The study focus on Nakuru County was justified by the County having the highest number of NHIF accredited health facilities by June 2016. Nyandarua was selected since it the only County which had all its public primary facilities accredited by NHIF to provide outpatient services under the National Scheme. Apparently both can be considered under the development status of counties in Kenya, where a county is rural, urban or peri urban. The development status of a county is an important consideration in health financing. The variations in social economic status of the populations, influences the purchasing power of the citizens, and consequently how populations access primary care services. Nakuru is a peri-urban County which is cosmopolitan, with multicultural and ethnic communities, it is also a vast county with eleven sub counties and 66 NHIF contracted health facilities. Nyandarua is a rural county, with five sub-counties and 23 NHIF contracted health facilities. The variations of the two counties in their social economic status can be implied to represent the counties in Kenya with regard to their development status of urban, peri-urban and rural county.

For the citizens, the study aimed at determining the level of citizens 'engagement by NHIF and the effect that this engagement has on citizens accessing primary care health services , the focus was citizens' knowledge of health benefits under NHIF National scheme primary care services, NHIF communication to the citizens, whether citizens' views and values are taken into account by NHIF in its decision making, whether NHIF is accountable to the citizens, and whether the citizens know how to select a primary care provider.

Under the health care provider, the scope of the study was to determine their responsibilities and how undertaking these responsibilities affect patients' access to primary care health services. The specific areas assessed were: NHIF communication to providers, the accreditation process, having a services contract and if the providers understood the content thereof, provider payment processes and monitoring providers' performance.

For the County Health Management, the study scope was the County Health Management team members (CHMTs) and the Sub county Health Management team (SCHMTs) members. The role of the County government was defined by: CHMTs/SCHMTs receiving communication from NHIF, the county having policy guidelines that guide in providing oversight in provision of NHIF primary care health services, the county having in place health facility infrastructure adequate for provision of primary care health services, the county ensuring that adequate financial resources are mobilized through capitation for delivery of NHIF primary care health services and NHIF accountability to the public.

1.8 Significance of the Study

The beneficiaries of this study are: the National government, policy makers, the county government, health care purchasers, health care providers, academicians and the citizens. This study has identified strategic interventions to improve NHIF purchasing of primary care health services.

1.8.1 Government and other Policy Makers

Purchasing is one of the key policy instruments to achieve the UHC goals of improved and equitable access and financial risk protection. By critically assessing the existing purchasing mechanisms used by the purchaser (NHIF) this study has identified factors that enable or hinder effective purchasing of primary care health care services. Some of the hindering mechanisms are NHIF not being accountable to the public, and not engaging the county health department in decision making. One enabler of strategic purchasing is NHIF communication to the citizens, providers and the County health Department. Lessons learnt can be used to inform the role out of the UHC program in Kenya in Counties where piloting of UHC is ongoing, these are, Kisumu, Machakos, and Nyeri County.

1.8.2 Health Care Purchasers

For health care purchasers (NHIF, PHI, CBHI and the government) lessons that can be learnt from the results of this study is that strategic purchasing requires the purchaser to engage actively with stakeholders (citizens, health care providers and stakeholders representatives). Health Systems thinking is also paramount and information and

communication strategies are key in informing the stakeholders their roles and responsibilities so as to ensure access to health services.

1.8.3 Academicians

The recommended theoretical model can be used to extend knowledge in health financing. Health systems thinking and communication are key in strategic purchasing of health services under the social health insurance (SHI) model in Kenya.

1.9 Assumptions of the Study

The study held several assumptions: First assumption was that the citizens are engaged in NHIF decision making. Also an assumption was made on exchange of communication and information between NHIF and the citizens. The researcher assumed that, citizens' membership to the scheme was valid, that they had declared all their dependents under NHIF National scheme: that citizens knew the rules of selecting a primary care health provider and the citizens had selected the primary care providers. Assumption was also made that there was equity in access to primary care services by citizens under NHIF, that citizens understood their entitlements under NHIF, citizens' views and values were taken into consideration by NHIF through feedback and complaint mechanisms and also through NHIF visiting the community to ask on their view, NHIF was assumed to be accountable to citizens.

Secondly it was assumed that the health care providers were accredited and undertaking their responsibility in provision of NHIF primary care health services as outlined in the services contract with NHIF. In addition, an assumption was made that the per capita amount of KES.1,200 per enrollee per annum, was the same across public, faith based

and private health facilities and that the mandates of all the facilities was the same for provision of National scheme primary care health services. Moreover the researcher assumed that, NHIF was communicating with the health providers, payment to providers was regular and that health providers were being monitored for performance by NHIF and the County Government.

Thirdly it was assumed that since health care is devolved, the County Government was playing its oversight role to ensure provision of primary care health services including those offered under NHIF National Scheme. It was assumed that the County Health Management was knowledgeable on the undertakings of NHIF in the counties. It was assumed that, there were policy guidelines which direct the County health department in supporting delivery of the NHIF primary care health services, NHIF was making a deliberate effort to communicate to the County Health Management, the county was playing its role in filling health facility infrastructure gaps to enable provision of services; that the County has mechanisms to ensure NHIF accountability and that the capitation funds were adequate to enable delivery of services.

1.10 Operational Definition of Terms

Capitation	It is a fixed payment per beneficiary to a health service provider responsible for delivering a range of services, (World Health Organization, 2000).
Citizens	All persons registered under the NHIF national scheme.
Citizen Engagement	Citizens understanding how the National Scheme operates and knowing how they are involved by NHIF in decision making.
Government	The county government.
Government Role	County government undertaking its stewardship role of ensuring delivery of primary care health services. in devolved health care
Passive purchasing	Implies following a predetermined budget to pay or simply paying bills when presented, (World Health Organization, 2000)
Patient	Citizens visiting the facility for outpatient services.
Health care Provider	Institutions contracted under NHIF to offer primary care health services.
Provider Responsibility	The health care provider undertaking their mandates as outlined in the contract with NHIF for provision of primary care health services.
Primary care health services	Curative health services offered at first contact level of care at the outpatient department.

Purchasing	Purchasing is the way by which financial resources are linked to the provision of health services, (Munge, Mulupi, and Chuma, 2015).
Purchaser	A purchaser is any organization that performs purchasing for a specified population. Five purchasers are identifiable in the Kenyan health financing system: households, the government (national and county), National Hospital Insurance Fund, Private Health Insurance and Community Based Health Insurance, (Munge et al., 2015) The focus of this study is NHIF.
Purchasing Mechanism	This is evaluating NHIF purchasing against strategic purchasing, which is engaging all the stakeholders i.e. citizens, county government, health care providers and NHIF.
Strategic purchasing	Maximizing health system performance by purchaser engaging all stakeholders; citizens, government, providers and provider associations (Goodwin, Gruen, and Iles, 2006).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section contains the literature reviewed from other sources focusing on the objectives of the study which were; to determine the effect of citizens' engagement, provider responsibility and County Government's role, on access to primary care health services under the NHIF National Scheme. On citizens' engagement, literature is presented on knowledge of insurance benefits package, purchaser ascertaining citizens' views and values, purchaser accountability and health care provider choice. On provider responsibility literature was reviewed on accreditation and service contracts, provider payments and monitoring provider performance. On Government's role in purchasing literature was reviewed on policy and guidelines that directs purchasing, health facility infrastructure, purchaser accountability and adequacy of purchasing funds. Literature on communication as the moderating variable and access to primary care health services the dependent was also reviewed.

Further this section presents the theoretical (principle agency framework and systems theory framework) and conceptual framework and a conclusion of the research gaps that the study sought to fill with regard to purchasing of primary care health services.

2.1.1 Strategic Purchasing Mechanism

According to Busse, Figueras, Robinson, and Jakubowski, (2007), strategic purchasing should be looked at from a broad perspective beyond the purchaser having a contract with health care providers, it includes the role played by citizens, providers, the government and health care purchasers. If benefits of purchasing are to be realized then

policy makers and implementers need to act upon all the diverse components of the health purchasing function.

Globally, a number of countries such as the United kingdom, Sweden ,Chile, Spain ,Hungary, Italy and New Zealand have made efforts to introduce strategic purchasing mechanism within their public health system (World Health Report, 2000). The success of countries such from these countries from passive to strategic purchasing of health services has led to increase in the success of health systems, (Raeissi, Nasiripour, & Karimi, 2013). A shift from passive to strategic purchasing saw Thailand on top of the list being one of the countries that delivers cost effective health services, in fact Thailand is one of the countries that have achieved UHC. Thailand achieved UHC in 2002 after introduction of "30-Baht for All Diseases Policy" for all illnesses in 2001. The 30-Baht policy implemented strategic purchasing of health services, through capitation. This led to phasing out of line item budget which was the main mechanism of financing the public health sector. The capitation system meant that providers were paid based on the number of people enrolled in their facilities, these health facilities were also referred to as a contracting unit, (Tangcharoensathien et al., 2015). This led to improved utilization of health care services in addition to significant reduction in household out-of-pocket payment, (Key Informant 16, 18 policy makers) (Tangcharoensathien et al., 2013).

2.2 Citizens' Engagement in Strategic Purchasing

One of the central elements in strategic purchasing is that a purchaser represents the wishes and preferences of the citizens. According to Figueras, Robinson, and Jakubowski, (2005), key strategic purchasing actions in relation to citizens,

beneficiaries or population served are: establishing the preferences and values of the population and using the information to stipulate the service entitlements/benefits, notify the population of their entitlements, roles and responsibilities, ensure that population access their entitlements, putting in place effective mechanisms to elicit feedback and receive and respond to complaints and from the population, and report to the public on use of financial and other resources and other performance measures.

Citizens should be engaged by the purchaser by stating that there are four strategies for citizen empowerment in strategic purchasing these are; Evaluating citizens health needs and preferences, determining citizens' opinions and values, ensuring purchasers' accountability and enhancing citizens' choices. These strategies may not only increase health systems' responsiveness but also, they are aimed at improving production/health, equity and allocative efficiency. In addition to strengthening downward accountability to the citizens served, patient empowerment can also be achieved through upward accountability of health purchasers and providers, by both being stewards of the health system (Busse et al.,2007).

Analysis of the purchasing mechanism in China's Rural Health Insurance Scheme-covering over 97% of China's rural population, showed that the success of the scheme was attributed to the scheme's policy which nurtures the relationship between the scheme (purchaser) and the citizens which requires the county scheme's office to elicit feedback from the insured in the design of the benefit package, claims methods, and fund management, to reflect citizens' health needs and preferences. The actual mechanisms available in the counties studied included NCMS Hotline for enquires and complaints, and publicizing NCMS fund expenditures. However, in collecting

information about health needs, none of the counties studied conducted surveys and analyzed information about the health problems and preferences for health care. Lack of medical knowledge means that the insured have limited participation in benefit package design and monitoring of NCMS implementation, (Etienne, Evans, & Baah, 2010).

In another study of critical assessment of purchasing strategies of health care in Tanzania revealed that National Hospital Insurance Fund members' interests were represented by the NHIF board which includes representatives of employees. The NHIF used client service days and field visits to assess member needs. However Focus Group Discussions indicated discontent from members arguing that they are not involved in decisions undertaken by the NHIF management. They indicated they have no formal forums to share complaints, however the Community Health Fund (CHF), had its members represented by council health service boards (CHSB) and health facility governing committee members which had representatives from the community. However it was noted that members do not get frequent feedback on income and expenditure of the fund resources and are rarely involved in decisions on their use. This study concluded that efforts are needed to make sure that scheme members have a voice in decision making system, (Mtei, 2015).

2.2.1 Purchaser Establishing Citizens Health Needs and Preferences

Ascertaining population health needs has been widely recognized as a very important activity in purchasing decision, however this exercise has not been regularly carried out in many countries health systems, and when the assessment of needs is done, it has not been integrated into purchasing decisions. These inadequacies are due to a variety of

reasons, including absence of public health function in several countries, geographically delimitation and coverage of health care purchasers for example health insurance in many countries and the insufficiency of public health skills in purchaser organizations, mostly schemes with lesser population coverage. These schemes or sickness funds reflect the lack of organization structure and process integration of public health function within purchasing decisions (Busse et al., 2007).

2.2.2 Purchaser Establishing Citizens' Views and Values

Purchasers' assessments often fail to reflect society views and values. However, several countries such as Sweden, Norway, United Kingdom, and the Netherlands have had innovative ways which other countries can draw from in order to incorporate society views and values when deciding the health services to provide. Citizens' involvement in determining service entitlement has been challenging, this is because, citizens often tend to overestimate their health care priorities with their opinions often lacking consistency. It is worthwhile to note that incorporating citizens values in purchasing decisions does not always result to equity, production and allocative efficiency and often tradeoffs are may be required at times (Busse et al., 2007).

2.2.3 Citizens' Ensuring Health Purchasers are Accountable

According to Busse et al., (2007) there are four ways through which purchasers can be made accountable to the respective populations they serve these are: formal representation of citizens in purchasers boards, legislative determination of benefit packages of care, and establishing laws on patients' rights and ways to raise complaints. Formal representation of citizens in purchaser organizations is common in many European nations. The challenge lies in establishing which group best represents

citizens in purchasers boards. A second way of ensuring purchasers' accountability is legislatively determining benefit package of care while guaranteeing coverage to all beneficiaries. This is a common practice in Western Europe SHI systems but less so in the most recently developed SHI systems in Eastern, Northern and Southern Europe. One main way of validating the role of citizens in purchasers' decision- making and ensuring purchaser accountability is to specify purchasers' roles, rights and responsibilities. Recently, there has been overwhelming debates on patients' rights conventions and declarations, nationally and internationally. Most countries have developed patients' rights legislation, or patients' charters or ethical code of conduct. The third mechanism to ensure that purchasers are accountable and responsive to the needs of citizens is by use of complaint mechanisms to influence health purchaser's decisions. Due to the contractual relationship between patients and SHI purchasers, complaints are raised before civil courts or through administrative channels or made through quasi-judicial bodies. Most National health systems have also put in place complaint mechanisms however, there lacks legally enforceable entitlements in most of them, thus reducing the scope for consumers to declare whether provision or non-provision of health services is appropriate (Figueras et al., 2005).

2.2.4 Citizens' Choice of Health Care Provider

Strategies for citizen empowerment correspond, to Hirschman's terminology, of "voice" mechanisms. Health organizations also rely heavily on patient exit mechanisms, notably, choice of purchaser and/or provider, as a key strategy to empower citizens. Citizens in most countries often have the right to choose a preferred primary health care provider. In some health systems, for example the Netherlands, citizens may choose primary care specialists and hospitals, through gatekeepers. Choice

of primary care provider may be restricted as is the case of most NHS systems, however, this is changing in most of the countries, as patients become more aware of their rights and responsibilities. For example in Sweden patients are allowed to choose any hospital outside their area of residence. English NHS has also increased hospital choices for patients under its jurisdiction. Though increased choices of health care providers by consumers may increase responsiveness, there debates on its negative effect on social justice specifically on equity, containing cost, allocative and production efficiency. Evidence show that provider choice inclines towards benefiting the higher social class more so those who are more informed, thus leading to increase in health inequalities. Policy should response to increasing access to information through communication and supporting choice among the less privileged and not necessarily reducing choice to reduce inequality (Busse et al., 2007).

2.2.5 Citizens Knowledge of Health Insurance Benefit Package

One of the measures of performance indictors or aspects of a social insurance is the benefit package, (Carrin & Chris, 2004). Citizens' pooled contributions of a social health insurance system are used to purchase a set of health benefits or interventions, which the insured members are all entitled to. The specified benefit package is also stipulated in a contract between the SHI and the health care providers at all levels of care. The benefit package should be as inclusive as possible, given the financial limitations of the SHI scheme. The specifications of benefit package should take into account population preferences taking into considerations efficiency and equity, to ensure resources are used without waste. Most importantly is for patients to receive effective services from the stipulated benefit package. There should be no under or over provision of health care. Overprovision is possible where the provider is paid fee for

services, where else under provision is possible where the provider is being paid capitation, (Carrin & Chris, 2004).

Monitoring of provision of services is therefore an important undertaking in SHI administration, to prevent overprovision or under provision. The monitoring mechanism should be in place to ensure that the insured fully receive the benefit package they are entitled to. Due to unavailable information on claimant rights, members may unknowingly not access the full scope of services they are entitled to. Information on claimant's rights should be coupled with appeal/complaint mechanisms, for patients to complaint when they receive inadequate care. However information on beneficiary's rights and there being a complaint mechanisms does not necessarily mean that the patients get to know what they should receive when they fall ill. In fact despite the mechanisms existence, the patient always rely on the health care provider to establish the kind of treatment he/she should receive, as they recognize the health care provider to be better informed to make such an establishment. There is an asymmetry of information, leading to an agency relationship, where the health care provider as the agent makes decisions on behalf of the patient who is the principal. This agency relationship may lead to the health care provider not providing services included in the benefit package to a patient even when they are necessary. This is more likely in instances where the provider has a strict budget and the intervention required is costly. For example in capitation mechanism under the NHIF National Scheme (Carrin & Chris, 2004).

Different provider payment mechanisms can impact on the performance of SHI due to overproduction and underproduction. This is often due to asymmetry of information

between the insurance funds in this case the principal and the health care provider as the agent. Existence of a claims review committee, whereby insurance claims are independently reviewed by a team of health personnel within the insurance fund, helps ensure that claims made by providers are justified (Carrin & Chris,2004).

2.3 Providers' Responsibility in Strategic Purchasing

Countries have developed from health service delivery models where there is a purchaser-provider split , with operations of the providers being managed by the purchaser through contractual agreement (Figueras et al., 2005). Kenya is one of the countries that have adapted this model. In purchaser-provider split, the purchasers supply services through the providers. Introduction of this model of purchasing has subsequently increased in provider sovereignty which results in a diverse power balances and different incentives for providers, purchasers, and consumers. Decision makers ought to be aware of how providers respond to the new changes in autonomy, power and incentives.

The response by providers may be bring progressive or retrogressive results depending on how providers view the introduction of purchaser-provider split as an opportunity or a threat. Providers may react to the new power balances in a structural or in a strategic manner. Structural reaction through merger or networking with other providers to increase market share for example contracting out, integration of services by building service provision networks and developing mechanisms to reduce patients waiting time. Strategic responses refers to how providers operate in a complete contracting environment with purchasers. Provider response may conflict to health systems objectives for example increasing on capacity or activities so that the provider will not

miss on opportunity for more resources. However the provider response may also be in line with a health system's goals of promoting equity, responsiveness, effectiveness and efficiency (Busse et al., 2007).

Strategic purchasing requires having favorable provider payment mechanisms and contract arrangements to pay for delivery of services. Ascertaining the best health care providers' means having providers who can guarantee fast access for patients to from a contracted health provider. It may also means establishing strategic coalitions to develop the providers in the future and disseminating provider best practices for other providers to benefit from (World Health Report, 2000).

According to Preker (2007), a purchaser's relationship with health care providers involves; Selection or accrediting providers while taking into considering the scope or variety and quality of services they can provide, provider location, developing service contracts; coming up with formularies of generic drugs, prostheses and surgical commodities to be used and standard treatment guidelines; establishing, implementing and modifying provider payment mechanisms to promote efficiency and delivery of quality services; determining provider payment tariffs/rates; securing information on service provision; monitoring provider performance and acting on under performance; auditing claims made by health provider; protecting fraud and corruption; paying providers often; equitably allocating resources; putting in place strategies to promote equitable access to services; establishing and monitoring consumer payment policies; developing, managing and using health and management information systems to support decision making. According to Carrin, (2011), providers can effectively provide if the purchaser regularly pays the provider on timely basis. In cases where

government fund the purchaser, the government has a mutual responsibility in ensuring adequate resources are mobilization of resources is done to ensure service entitlements are met.

Results of a study in Tanzania on critical assessment of health care purchasing strategies, showed that providers are also represented on the NHIF board. NHIF management normally visits contracted providers during supervision. Providers are also invited to annual client days. Providers expressed discontent in relation to claims settlements, arguing that their claims have been rejected without proper justifications, and they have no forum through which to channel their complaints (Etienne et al., 2010).

2.3.1 Provider Accreditation and Service Contracts with Purchaser

In Kenya the regulations of NHIF accrediting health facilities is outlined in the NHIF accreditation regulations of 2003. The NHIF provider contracting process involves four steps, these are provider application for accreditation, NHIF inspection, gazettement and signing of contract between NHIF and the health facility, (NHIF, 2012). A strategic purchaser must decide on the provider(s) to purchase services from. This may involve only public health providers, or may include both public and private providers. This often involves an approval process. Selecting of providers may not always be practical, especially where there a few or only one health care provider in a given location/area. Wherever possible, a purchasers must make precise decisions on what kind of providers to approve taking into consideration providers' site in relation to the target population, provider ability to offer an appropriate scope of quality services. Where options are not possible, clear systems of measuring performance and

quality developments are needed. After selecting providers, the purchaser must establish an agreement with accredited providers in the form of a formal contract, which serves as a means of making providers aware of the expectations of the purchaser, this includes the range of services to be offered; quality expectations; provider payment methods, regularity of payments and level of payment; any information returns or that providers are required to submit as evidence for performance; and details on action to be taken for performance below expectations (Tangcharoensathien *et al.*, 2015).

Contracts are being used by purchasers to make explicit the services that should be provided and the terms on which they are provided, and at the way that payment mechanisms can be used to influence provider behavior. The success of contracting depends on how well these tasks are performed. But contracts and payment systems are just two elements among the mix of factors that will determine the extent to which providers respond to purchasers' objectives. Another important factor will be the nature of the provider organizations themselves. Their form of ownership, their degree of autonomy and scope for decision making regarding finance, service content, staffing and other areas and the type of market structure within which they operate, will all influence the way in which they act as the purchaser's agent (Figueras et al., 2005).

2.3.2 Provider Payment by Purchaser

The way in which providers are paid is known to have a profound impact on the volume and quality of health services delivered (Cashin, 2014). However, traditional ways of paying health care providers such as salary, fee-for-service, bundled payments, and capitation do not explicitly reward providers for delivering better quality care. Any impact on quality of these payment methods is indirect and often incidental. For

example, fee- for- service payment creates incentives for high levels of service provision, and thus might indirectly lead to higher levels of quality. In contrast, traditional capitation payment might secure expenditure control, but it offers little direct incentive to promote high quality care and may instead create incentives for skimping on necessary services. In order to promote quality and other health systems objectives, any health system should use some blend of payment mechanisms to pay providers. For example systems of social health insurance have in general moved from fee-for-service to bundled payments over the last 20 years, although retaining elements of retrospective payment, as well as block contracts.

Health insurance funds and even ministries of health now more typically purchase services in a strategic way, rather than just passively allocating salaries or line item budgets on a formulaic basis, and encourage improved internal efficiency through improved service payment systems (Figueras et al., 2005). New primary care payment systems most often being developed are primary care capitation. Capitation has incentives of cost containment, incentive for providers to promote preventive care and it dissuades the provider in delivery of production of services.

According to Resilient and Responsive Health Systems (2014), provider claims should be audited by a purchaser and steps should be taken to protect against fraud and corruption. The effective provision of services is also affected by purchasers' ability to pay providers regularly and in a timely fashion.

2.3.3 Monitoring Provider Performance and Action for Poor Performance

Strategic purchasers have a responsibility to actively monitor provider performance, particularly in terms of service quality. According to Honda, (2014), monitoring activities could include routine analysis of information submitted by providers (for example, to ensure that standard treatment guidelines are being followed, or to pick up 'red flags' such as high levels of hospital acquired infections) and regular audits of health facilities. It is equally important to establish effective ways for the population served to provide feedback on their experience of health services, including complaints mechanisms but also pro-active ways of seeking input from citizens. Monitoring needs to be backed up by taking action on poor performance (including responding to patient complaints), which could include de-accreditation (although this may not be feasible in relatively under-served areas) or instituting quality improvement plans.

According to Carrin and Chris, (2004), SHI should put in place monitoring mechanisms to ensure that the benefit package is fully received by all the insured who are entitled to it. This is because patients lack adequate knowledge on the health interventions they are entitled to, and they may suffer under or over provision of health services. Under provision is more common under capitation and monitoring is again important, especially in relation to underproduction, such as by monitoring utilization of services.

2.4 Government's Role in Strategic Purchasing

According to Mathauer, Dale, and Meessen, (2017), exercising health system function of leadership, management and governance is necessary to facilitate strategic purchasing. It is referred to as exercising power, setting roles and responsibilities and determining relations of the different health actors, in this context,

the purchasers, providers, provider associations, society and the beneficiaries/citizen. The role of governance in promoting strategic purchasing include; putting in place clear structures for purchaser(s) and providers, building infrastructure gaps where they exist, ensuring adequate resources are raised to meet service requirements and ensuring accountability and transparency of purchasers (Figueras et al., 2005).

In strategic purchasing, government representative and regulatory bodies are expected to provide direction and leadership to enable purchasers undertake their roles and responsibility in strategic purchasing and to ensure society needs, preferences and priorities are addressed in purchasing decisions, however this is inhibited by the role the local government should play in strategic purchasing (Honda, McIntyre, Hanson, & Tangcharoensathien, 2016).

2.4.1 Establishing Policy Frameworks for Purchaser and Providers

According to Figueras, Robinson and Jakubowski, (2005), key actions in promoting strategic purchasing actions by both National and County governments include; establishing clear policy and regulatory structures for purchaser(s) and providers, which includes ensuring availability of services to, and financial protection of, the population served. Secondly, building infrastructure where gap exists, thirdly ensuring adequate resources are raised to meet service entitlements and finally ensuring accountability of purchasers to government and citizens, especially where public funds are used. According to (Mathauer et al., 2017), the governance function is an enabler of strategic purchasing, through governance, roles and responsibilities of the different stakeholders, specifically purchasers, health providers, respective associations, society and the beneficiaries/citizen, are set.

There is a general agreement on the government's stewardship role in ensuring health system effectiveness. The quest for policy-makers in purchasing is how to put government stewardship in place. The question that remains is at what level of government should purchasing stewardship occur? Specifically what is the level of government at which purchasing stewardship should occur? In Kenyan context, should this be at the National government ministry of health central or county government. Taking into consideration all factors, devolving purchasing stewardship to lower levels of government has been seen to result to increased systems responsiveness (Busse et al., 2007).

2.4.2 Ensuring Health Facility Infrastructure Adequacy

One of the role of government in strategic purchasing is to put up physical infrastructure where none exist or there gaps. In addition, a strategic purchaser can influence the distribution of health resources for example health workers by paying higher salaries for health services provided in marginalized areas (Busse et al., 2007). According to Munge et al., (2017), NHIF's rigorous accreditation systems disadvantages some facilities especially those in marginalized regions thus creating geographical barriers to access health services. The government has a role to fill service delivery infrastructure gaps. The norms and standards governing distribution of health workers and health facilities in line with population and distance), as outlined in the Kenya Essential Package of Health, these norms were based on population burden of disease (Mbau et al., 2018).

2.4.3 Ensuring Accountability of Purchaser

The government has an oversight responsibility to ensure regular (annual) reporting on use of funds by the purchaser, especially where public funds have been used. Other accountability mechanisms include, having complaint and feedback mechanisms, which the purchaser uses to determine members needs and preferences. Another of accountability instruments is citizenly representation in purchaser's boards. Accountability and transparency to government by the purchaser for services offered is critical (Figueras et al., 2005). Honda in (2014), established that one accountability instrument is for purchaser to report use of funds to the public. Busse et al., (2007), established that there is a challenges exist in determining who best represents consumers in a health purchaser's board. Abolghasem et al., (2018), found that lack of sufficient transparency in financial resources is a major challenge in strategic purchasing. According to Munge et al., (2017) accountability of NHIF in Kenya to the citizens and to the government is through several institutions including the Ministry of Health, but not directly to the governments or citizens. Accountability is more concerned with monetary performance than with other components of purchasing processes such as response of NHIF to complaints. Results of a study in China indicate that though accountability instruments, for example reporting and complaints systems are well established, most are non-functional. The authors also established that in the Philippines, systems to allow members to voice their preferences, needs and complaints were not well established (Honda et al., 2016).

2.4.4 Ensuring Adequate Financial Resources are mobilized by Purchaser

According to (Figueras et al., 2005), one main strategic role of the government in purchasing is to ensure adequate financial resources are mobilized to meet service

obligations and ensure accountability of purchasers. According to Abolghasem et al., (2018), inadequate financial resources in relation to capacity and variations is a challenge in implementation of strategic purchasing. Munge et al., (2017) established that NHIF has inadequate resources mobilized to support service delivery requirements, this has been occasioned by the low premiums which are not revised regularly.

2.5 Access to Primary Care Health Services

UHC is attained when the population obtains the health services they need without suffering financial catastrophe. Access is the ability to do both (Evans et al., 2013). Hence, UHC is impossible without universal access, however the two are not the same. Access is a measure of performance of health care systems worldwide. While access may be defined as the characteristics influencing the initial contact to health services, this often differ and may include demand, supply and process factors. Levesque, Harris, and Russell (2013), describes access factors to include supply-side features of health systems and organizations, to demand-side features of populations, and to process factors describing the ways in which access is realized. This study will focus on dimensions of access as perceived by Levesque *et al.*, (2013) and (Evans *et al*., 2013) which are adequacy, acceptability, availability, affordability and physical access.

2.5.1 Adequacy of Primary Health Care Services

Levesque *et al*., (2013) defines appropriateness as the fit between services and clients need, its timeliness, the amount of care spent in assessing health problems and determining the correct treatment and the technical and interpersonal quality of the services provided. Adequacy relates to the appropriateness (what services are

provided) and quality (the way in which they are provided) of health services and its integrated and continuous nature.

The content and effectiveness of health care one has the opportunity to utilize matters (Murray & Evans, 2003). Opportunity to utilize only services of poor quality in this sense is seen as restriction of access to health care. Acceptability and adequacy are part of appropriateness since one should not have access to health care based on geographical and organizational availability and affordability alone, but that access encompasses the possibility to choose acceptable and effective services. The opportunity for a person to utilize the services of untrained practitioners (for example, witch doctors and healers) cannot be equated to the opportunity for another person - wealthier - to utilize highly specialized services, if these services generate different health outcomes or satisfaction towards services.

Ability to engage in health care would relate to the participation and involvement of the client in decision-making and treatment decisions, which is in turn strongly determined by capacity and motivation to participate in care and commit to its completion. This dimension is strongly related to the capacity to communicate as well as notions of health literacy, self-efficacy and self-management in addition to the importance of receiving care that is actually appropriate for the person, given its resources and skills. Access to optimal care ultimately requires the person to be fully engaged in care and this is seen as interacting with the nature of the service actually offered and provided (Levesque *et al.*, 2013).

2.5.2 Acceptability of Primary Health Care Services

Further Levesque *et al.,* (2013) defines acceptability to relates to cultural and social factors determining the possibility for people to accept the aspects of the service (for example the sex or social group of providers, the beliefs associated to systems of medicine) and the judged appropriateness for the persons to seek care. Ability to seek health care relates to the concepts of personal autonomy and capacity to choose to seek care, knowledge about health care options and individual rights that would determine expressing the intention to obtain health care. A good example would be female discrimination regarding the initiation of care or abuse and neglect discouraging ethnic minorities to seek care. This relates to the challenge of ensuring that care meets the needs of different cultural, socioeconomically disadvantaged and vulnerable populations.

2.5.3 Availability of Primary Health Care Services

Availability and accommodation refers to the fact that health services (either the physical space or those working in health care roles) can be reached both physically and in a timely manner. Availability constitutes the physical existence of health resources with sufficient capacity to produce services (existence of productive facilities) (Levesque *et al.,* 2013). It results from characteristics of facilities (for example, density, concentration, distribution, building accessibility), of urban contexts (for example, decentralisation, urban spread, and transportation system) and of individuals (for example. duration and flexibility of working hours). It also relates to characteristics of providers (for example, presence of the health professional, qualification) and modes of provision of services (for example, contact procedure and possibility of virtual consultations). Access is restricted if available resources are

unevenly distributed around a country, or across levels of care (with specialty care developed at the expense of primary care).

Ability to reach health care relates to the notion of personal mobility and availability of transportation, occupational flexibility, and knowledge about health services that would enable one person to physically reach service providers. Restricted mobility of the aged and handicapped, or the inability of casual workers to be absent from work to consult medical providers would be examples of these.

2.5.4 Financial Affordability of Primary Health Care Services

According to Evans *et al.,* (2013) affordability is a measure of people's ability to pay for services without financial hardship. It takes into account not only the price of the health services but also indirect and opportunity costs (for example, the costs of transportation to and from facilities and of taking time away from work). Affordability is influenced by the wider health financing system and by household income. Financial affordability can be improved by reducing direct, out-of-pocket payments through insurance prepayments and pooling - for example, the collection of government revenues and/or health insurance contributions to fund health services or through demand-side stimuli such as conditional cash transfers and vouchers.

Affordability results from direct prices of services and related expenses in addition to opportunity costs related to loss of income. Furthermore it can vary by type of services and depends on the capacity to generate the resources to pay for care (for example, mode of payment, mobilization of resources). Economic studies of utilization models demand using variables such as price of care, travel time and the opportunity costs

linked to it, patient's income, perceived quality of care, provider behaviour, etc. These models give useful information about elasticity of demand for different types of health services (Murray & Evans, 2003).

Affordability describes the capacity to generate economic resources - through income, savings, borrowing or loans - to pay for health care services without catastrophic expenditure of resources required for basic necessities (for example, sale of home). Poverty, social isolation, or indebtedness would be examples of factors restricting the capacity of people to pay for needed care.

2.5.5 Geographical and Physical Accessibility to Primary Care Health Services

The requirement that services be physically accessible is fulfilled when these are available, of good quality and located close to people. Service readiness is said to exist when the inputs required to produce the services (for example, buildings, equipment, health personnel, health products, technologies) are also available and of good quality (Evans *et al*., 2013).

According to Evans *et al*., (2013), geographical or physical accessibility, can be understood as the availability of good health services within reasonable reach of those who need them and of opening hours, appointment systems and other aspects of service organization and delivery that allow people to obtain the services when they need them.

2.6 Social Health Insurance Communication Mechanisms in Strategic Purchasing

Purchasing of health services through an SHI can be looked at from a principal-agent relationship. According to Figueras et al., (2005), the principal-agent theoretical perspective provides a framework within which the relationships between different actors [Principal (P) and Agent (A)] may be examined. This framework identifies: (i) P-A relationship 1-the relationship between citizens and third-party purchasers, (ii) P-A relationship 2-the relationship between purchaser and providers and (iii) P-A relationship 3-the relationship between the government and the purchaser. In this framework, there exist asymmetry of information between the principal and the agent.

In the first relationship between citizens and third-party purchasers/NHIF), the third-party purchasers who is the agent is deemed to have more information than the citizen. In the second set of relationship between the purchaser/principal and providers/agent, the purchaser may be deemed to have more information. In the third set of relationship between the government and the purchaser, the purchaser/NHIF may be deemed to have more information than the government. This asymmetry of information may lead to under provision or over provision of health services. Empowering the principal and the agent with information through effective communication strategies is important in ensuring that services provided promote equity and efficiency.

Effective strategic communication is essential to realization of UHC. Progress toward UHC requires local ownership and tailored strategies for particular settings. Different stakeholders must be involved these includes politicians, health care purchasers, health care providers, patients/citizens, suppliers, and civil society groups. Each audience requires tailored communication approaches to change their knowledge, attitudes, and behaviors, [Joint Learning Network for UHC, Universal Health Coverage, Health

Finance and Governance, and Project, Abt Associates, Results for Development., (2018)]. The authors' further state that strategic communication is careful, coordinated actions intended to inform and influence key stakeholders. These actions may engage stakeholders in information sharing, conversation, and/or shared learning, with the aim of making decisions or influencing behavior changes. Strategic communication for UHC enables all stakeholders to understand their rights, responsibilities, and opportunities to maximize the benefits of UHC and to act in the best interest of realizing those rights, responsibilities, and opportunities. This is often a first step for many in the struggle to realizing UHC. Although decision makers, policymakers and implementers recognize the importance of strategic communication for UHC, execution and implementation of strategic communication does not exist in most health systems.

NHIF communication to the public is through published detailed information on the NHIF website and advertisements widely in the media, however NHIF's use of its website, newspapers and media announcements to inform the public of its service limits the spread of its messages to those who have access to these media (Munge et al., 2017).

According to WHO, (2017), South Africa is moving towards UHC by implementing National Health Insurance (NHI). One of the key to implementation of NHI is a communication strategy to help stakeholders familiarize themselves with NHI, this strategy was developed after a research was undertaken on communication and media engagement. While respondents across all social groups validated the values and principles of NHI, they cited anxieties and fears about NHI implementation and the consequences for themselves about the unforeseen changes to the health care system. This followed development of a strategy to create awareness among all the relevant

stakeholders. A communication strategy should take into consideration the key stakeholders' views on the best way to communicate with them base on different social demographic characteristics, in terms of race, gender, social class and geographical region. Some of the initial commination strategies used by NHI to disseminate information was use of billboards, radio, and pamphlets for mass distribution. The radio and leaflets were in English and several local languages. Following further consultation with stakeholders, information would also be disseminated through television, print media, social media and posters (WHO, 2017).

2.7 Strategic Purchasing and Universal Health Coverage

Purchasing creates a link between pooled funds and effective services. If we are going to achieve universal access, we ought to move from passive to active/strategic purchasing. Strategic purchasing aims to increase health systems' performance through effective allocation of financial resources to providers (Etienne et al., 2010).

According to Etienne et al., (2010) UHC means that all people receive the health services they need without suffering financial hardship when paying for them. The full spectrum of essential, quality health services should be covered including health promotion, prevention and treatment, rehabilitation and palliative care. If people have to pay most of the cost out of their own pockets, the poor will be unable to obtain many of the services they need and even the rich will be exposed to financial hardship in the event of severe or long-term illness. Forms of financial risk protection that pool funds (through tax, other government revenues, and/or insurance contributions) to spread the financial risks of illness across the population, and allow for cross subsidy from rich to poor and from healthy to ill, increase access to both needed services and financial risk

protection. Even where funding is largely prepaid and pooled, there will need to be trade-offs between the proportions of the population to be covered, the range of services to be made available and the proportion of the total costs to be met.

UHC is not just health financing, it should cover all components of the health system to be successful: health service delivery systems, health workforce, health facilities or communications networks, health technologies, information systems, quality assurance mechanisms, governance and legislation. UHC is not only about assuring a minimum package of health services, but also about assuring a progressive expansion of coverage of health services and financial risk protection as more resources become available. UHC does not mean free coverage for all possible health interventions, regardless of the cost, as no country can provide all services free of charge on a sustainable basis. UHC is comprised of much more than just health; taking steps towards UHC means steps towards equity, development priorities, social inclusion and cohesion (Etienne et al., 2010).

2.8 Theoretical Framework

2.8.1 Principal Agency Theory

In seeking to understand the various components of strategic purchasing and the organizational environment within which it operates, this study will adopt a principal–agent theoretical perspective by Arrow (1985). The Economics of Agency in (Figueras et al., 2005). See Figure 2.1.

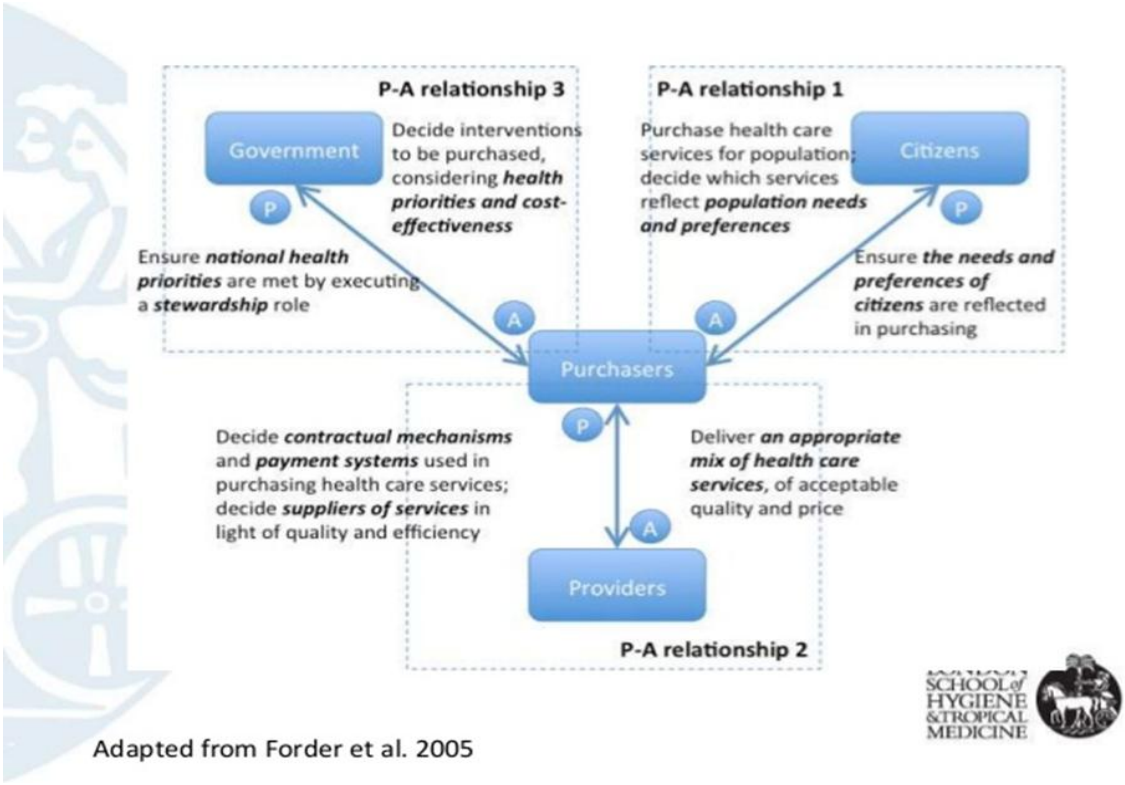

Figure 2. 1: Principal–Agent framework

Principal–agent relationships works best when several preexisting conditions are met: first, both the principal and the agent must try to maximize their utility independent of each other, secondly, agents must be determined to maximize their income with minimize effort, thirdly pay correlate with outcomes and the effort of the agent, fourthly the principal must bear perfect information concerning the agent's activities and finally, the principal and the agent must enter into a mutual contract. If these conditions hold, the agent cannot be exploited by the principal since the contract is voluntary, and the agent cannot be dishonest if pay is related to effort and expected outcomes. The contract is expected to maximize utility of both the principal and the agent (Preker, 2007).

According to Figueras *et al*., (2005), the principal-agent theoretical framework provides perspectives along which relationships between different players in strategic

purchasing- Principal (P) and Agent (A)] may be assessed. This framework identifies: first P-A relationship to exist between citizens and third-party purchasers, second P-A relationship between purchasers and health care providers and the third P-A relationship to be between the government and the purchaser.

The first set of agency relationship takes place between the citizens (the principal) and the third-party purchaser (National or local government, a health authority and an insurance fund). The third-party purchaser acts as the citizens' agent in the purchase of health care services. A key consideration is extent to which the agent-purchaser takes into consideration the needs and preferences of citizens, the society and the population (Figueras et al., 2005).

The second set of agency relationship is between the third-party purchasers, acting as the principal. The purchaser puts in place financial and monitoring mechanisms, contractual and regulatory frameworks to ensure that the health provider for example a hospital, who is the agent, delivers an appropriate combination set of health care services, that are of quality, at an agreed price. In this relationship the accreditation and service contracts and the provider payment mechanisms are key considerations. Moreover, the external environment within which the provider functions for example monopolistic, competitive, profit making and not for profit and the provider's internal environment for example management structures taking into consideration effective or non-effective financial and clinical management, can all also be expected to impact upon this framework (Figueras et al., 2005).

The third set of agency relationship, the purchaser acts as an agent for the government or the state. In this case, the government acts as the principal to ensure that the national and population health priorities are met. This set of relationship introduces the role of the government as a steward of the health system. This role has recently been emphasized as the most important health system function (Figueras et al., 2005).

The principal-agency framework informed the conceptual framework (see Figure 2.2), in seeking to understand how citizens, the government, health care providers and NHIF the purchaser work together under strategic purchasing to ensure access to primary care services under the NHIF National scheme. This engagements involves a combination of resources, decision making, delivery mechanisms, incentives, accountability and information.

The principal agency framework outlines a relationship where each of the three set of agency relationship work in isolation, however in 2007, WHO recommended systems thinking in overcoming the challenges experienced in health care settings. As such the study took into consideration the systems theory as recommended by (Mockler, 1968), who recommended that organizational components are interdependent and must work together to achieve a common goal.

2.8.2 The Systems Theory

Mockler (1968), discovered that systems theory provides a conceptual basis of principles and guidelines for establishing a more efficient system for management and decision making. Systems theory, also called social systems theory, views a society as a complex arrangement of elements, including individuals and their beliefs, as they

relate to a whole (e.g., a country) (Mockler, 1968). Mockler pointed out that there three components of systems: Hierarchical ordering of the components; Interdependence of components with communication acting as the linking mechanism between the components and these components working towards achieving a common goal and objectives (Mockler, 1968).

Systems theory focuses on the dynamic interrelationship and interaction of entities. This theory has had an even greater impact on the internal and external organization of, and the decision-making processes within, the operations of an organization. The information-communication systems necessarily create a link between all the components needed to operate an organization successfully i.e., inputs (resources), processes, people, and materials assembled for the purpose of achieving a common goal. Following from the systems theory, citizens, health care providers, NHIF the purchaser and the Government must work together under strategic purchasing to ensure that primary care services are accessible to all citizens, as Kenya strives to achieve universal health coverage.

2.9 Conceptual Framework

The conceptual framework represents a diagrammatic presentation of the relationship between the dependent and the independent variables as per the study objectives.

The first objective was on citizen engagement in NHIF purchasing, the citizens were said to be engaged if they knew the NHIF primary care services benefit package, if NHIF was communicating to them, if NHIF determined their views and values, if citizens were aware of NHIF accountability mechanisms in place, and if the citizens were able to choose a primary care health provider.

The second objective was on the provider responsibility, the health care providers may be assumed to have been undertaking their responsibility if they are knew the accreditation process by NHIF, if they had an updated contract and were delivering services as stipulated in the contract, if they were aware of the provider payment methods and if their performance was being monitored by the County Health department and NHIF.

The third objective on County government's role was measured by determining if there existing guidelines that guide the county health department in overseeing the implementation of the National Scheme, if there was adequate health facility infrastructure, if there was adequate financial mobilized through capitation, and if the County health department was aware of NHIF accountability mechanisms in place.

The moderating variable was NHIF communication, to the citizens, to the health care providers and to the County Health Department. The dependent variable was access to NHIF primary care health services. Access was measured by determining if the outpatient services were available, adequate, affordable, accessible and acceptable. The conceptual framework is presented in Figure 2.2.

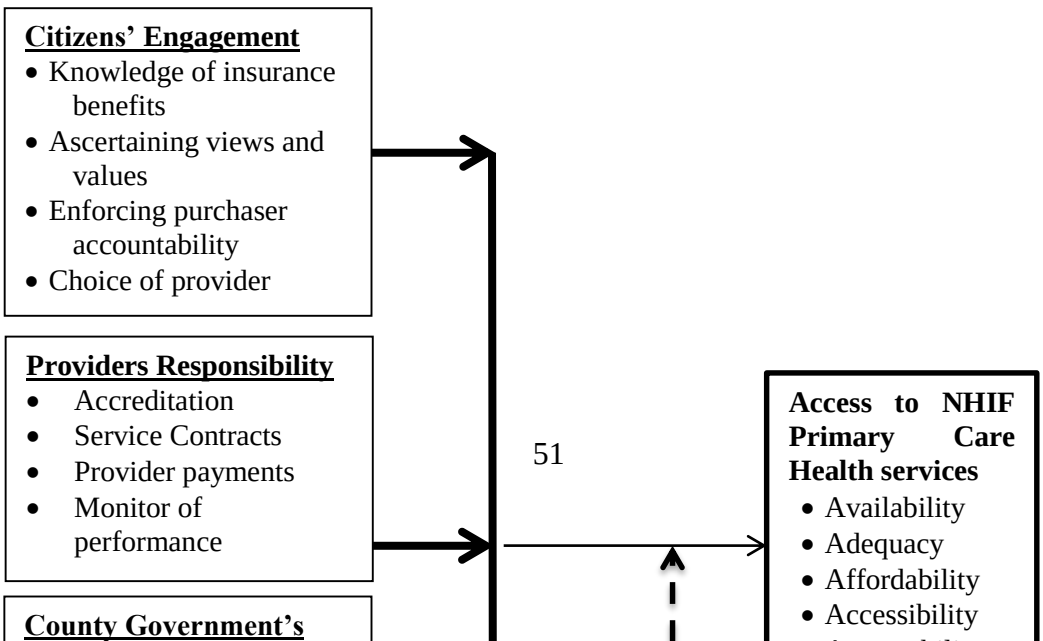

Figure 2. 2: Conceptual Framework

2.10 Knowledge Gap

Following extensive literature review, was no known study that had been undertaken on access to primary care health services under the NHIF National Scheme since its inception in April, 2015. NHIF National Scheme is believed to be undertaking strategic purchasing for primary care health services. Studies that have been done recently on strategic purchasing in Kenya were qualitative in nature. This limited clarification on the magnitude and significance of purchasing arrangements on access to primary care services. No known study had been undertaken in strategic purchasing using quantitative analysis. The studies available only focused on the NHIF the purchaser or Ministry of health officials or relationship between NHIF and health care providers, no known study on strategic purchasing has focused on the relationship between NHIF and Citizens and NHIF and the County governments. This study therefore included all the key stakeholders that must be engaged for strategic purchasing to take place, these were the citizens, health care providers and the County government.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the study research design, the target population, study area, sampling method, sample size, data collection instruments, data analysis and ethical considerations adopted by the researcher.

3.2 Research Design

A research design is the structural framework and underlying conditions for collection and analysis of data. It is a mental framework within which research is conducted, (Kothari, 2009).The study was a cross sectional research employing various data analysis designs. Descriptive design was adopted so as to generate summary statistics, correlational design was used to generate the correlation matrix, and quantitative design was used for inferential statistics. Descriptive research describe the characteristics of a particular phenomenon, situation, individuals or groups as they exist in their natural set up (Saunders, Lewis, & Thornhill, 2009). Data was collected using semi-structured questionnaires from three categories of respondents.

3.3 Study Area

The study was undertaken in Nakuru and Nyandarua Counties. Nakuru County covers an area of 7,495.1 Km². It lies within the Great Rift Valley and borders seven other counties namely; Kericho to the west, Baringo and Laikipia to the north, Nyandarua to the east, Narok to the south-west and Kajiado and Kiambu to the south. Nakuru town is the headquarter of Nakuru County, the town is 171 kilometers from Nairobi. The

2009 population census put the county's population at 1,603,325, with this number projected to increase to 2,046,395 by 2017, (Republic of Kenya, 2014a). Nakuru County had 424 health facilities (166 public, 14 NGO's, 55 faith based and 189 private) by June 2016, the percentage population coverage with NHIF was 34.2 percent, (Republic of Kenya, 2015).

Nyandarua County covers an area of about 3,245 km2. It is located in the central part of Kenya. It borders Laikipia County to the north, Nyeri County to the east, Kiambu County to the south and Nakuru County to the west. Ol-kalou town, headquarter of Nyandarua County is 161.8 Kilometers from Nairobi the capital city of Kenya. The 2009 population census put the county's population at 596,268 with this number projected to increase to 710,752 by 2017, (Republic of Kenya, 2014b). Nyandarua County had 145 health facilities in June 2016 (65 public, 1 NGO, 14 faith based and 65 private), the percentage population coverage with NHIF was 22.5 percent, (Republic of Kenya, 2015).

3.4 Target Population

The first step in developing any sample design is to clearly define the set of objects, technically called the Universe, to be studied. The universe can be finite or infinite. In finite universe the number of items is certain, but in case of an infinite universe the number of items is infinite, (Kothari, 2009).

The study targeted two counties, NHIF members registered under the National Scheme in the two counties, health facilities contracted to offer primary care health services under the NHIF National Scheme, and the County health management teams. The study

targeted two counties, Nakuru and Nyandarua Counties. Nakuru County had the highest number of NHIF accredited facilities (public, private and faith based) offering primary care health services, in June 2016. Nyandarua County on the other hand had all its public primary facilities accredited to provide NHIF primary care health services in the same period, unlike other counties where only a few public primary health facilities or none had been accredited (NHIF, 2016). Counties in Kenya can be categorized with regard to their development status, as rural, urban and peri urban. According to the (Kenya National Bureau of Statistics, 2012) the two counties met this categorization. Nakuru County has both urban and peri-urban characteristics, Nakuru as an urban county ranks second after Nairobi in the Kenya urban areas performance index report of 2017. It is a cosmopolitan county with variation in ethnic, cultural and economic activities. Nyandarua is a rural county. The development status of a county depicts variations in social economic status of the populations, which influences the purchasing power of the population and also how populations access primary care health services.

To respond to the first objective, the study targeted a finite population of 392,531 NHIF members that were registered with the 89 facilities contracted by NHIF in the two counties for primary care services, by June 2016, refer to Appendix 2. To respond to the second objective, the study targeted 89 health facilities contracted by NHIF under the National scheme in the two counties. Nakuru had 66 health facilities and Nyandarua had 23 health facilities contracted to provide primary care health services. The study targeted all the 89 facilities in-charges of the respective health facilities. To respond to the third objective, the study targeted 120 County Health Management Team members (CHMTs) and Sub-County Health Management Team members (SCHMTs) from the two counties. There are 40 CHMTs in both counties, with 20 CHMT members from

each county. There are 5 and 11 sub-counties in Nyandarua and Nakuru respectively. Each sub county has 5 SCHMTs, therefore a total of 25 SCHMTs in Nyandarua and 55 in Nakuru County.

3.5 Sampling Procedure and Sample Size Determination

Whatever the nature of research, a researcher need to consider the need to use sampling. Occasionally, it may be possible to collect and analyse data from every possible case in the research, this is termed a census. However, some research questions and objectives may restrict data collection and analysis due to constraints of time, money and often access, thus necessitating the need to use a sample (Saunders *et al*., 2009).

3.5.1 Sample Size Determination

Generalisations about populations from data collected using any probability sample are based on statistical probability. The larger your sample's size the lower the likely error in generalising to the population (Saunders et al., 2009). It is not surprising that the final sample size is almost always a matter of judgement as well as of calculation (Kothari, 2009).

Sample size of the citizens was determined using the Fischer's et al., 1991 formula, suitable for calculation of a sample size where the population is more than 10,000.

$$n=\frac{Z^2\ (p\ q)}{d^2}$$

Where

n= Minimal sample size where the population is more than 10,000.

Z= standard normal deviation (1.96 for a confidence level of 95%).

p =assumed registration by citizens/patients with Primary Care Providers 50%.

q=1-p

d=maximum sampling error allowed (taken to be 5%).

Therefore our sample size (N) $= \frac{1.962(0.5)\,(0.5)}{0.05^2} = 384$ citizens/respondents.

An addition of 10% of the patients was done in order to cater for non-response and also increase precision, therefore arriving at a sample of 426 citizens.

From the 89 health facilities registered to offer NHIF outpatient services, a sample of 72 facilities was arrived at based on the nf formula proposed by Mugenda, 2012 for determining sample size from a target population of less than 10,000.

$$.nf = \frac{n}{1+n/N} = \frac{384}{1+384/89} = 72 \text{ health facilities}$$

Seventy two health care providers representing 72 health facilities were included to be part of the sample. All the 120 CHMTs and SCHMTs members were considered for this research.

3.5.2 Sampling Procedure

If a researcher decides to use a sample for their study, two sampling techniques are available that is probability and non-probability sampling techniques.With probability samples the chance, or probability, of each case being selected from the population is known and is usually equal for all cases. For non-probability samples, the probability of each case being selected from the total population is not known (Saunders *et al*., 2009).

The two counties were selected based on the number of health facilities accredited by NHIF to provide primary care health services. Purposive sampling was done for the two counties. A multistage sampling was done for the health facilities. To arrive at the desired sample size of 72 for the health facilities, out of the 89 NHIF contracted facilities, a multistage sampling was done from a random list, with every 2nd facility being selected to be part of the study. This resulted to three stage sampling, with the 1st stage generating 44 facilities, 2nd stage 22, 3rd stage 6 health facilities. A total of 72 facilities were sampled. Purposive sampling of 72 facility in charges was done from the respective facilities. Purposive sampling is considered more appropriate when the universe happens to be small and a known characteristic of it is to be studied intensively (Kothari, 2009).

From the 72 facilities, 426 patients/citizens were proportionately distributed based on the number registered under the National scheme per facility. Simple random sampling was used to select the patients/citizens from the 72 health facilities. A census of 120 County Health Management was also done, refer to Table 3.1.

Table 3.1: Target Population and Sample Size Distribution

	Target Population	**Sample Distribution**	**Sampling Procedure**
Patients/citizens	392,531	426	Simple random
Health Facilities	89	72	Multi-stage sampling
Facility In charge	89	72	Purposive sampling
CHMTs/SCHMTs	120	120	Census

3.5.3 Inclusion and Exclusion Criteria

i) Inclusion Criteria

For inclusion into the study sample, the 426 patients who represented the citizen were selected based on having an NHIF card and having used it more than once to access primary care services at the selected health facility. The patient was also expected to be over 18 years of age, and those who were less than 18 years were required to be accompanied by a guardian. The minors were expected to assent to their guardians responding to questions on their behalf. It was also a requirement for the adults to consent to respond to the questionnaire.

For the 72 health care provider, inclusion was based on them being facility in charge, administrator or a finance in charge. Those who consented to undertake the study were included. For the 120 County and Sub County Health Management members, those who were willing to participate were included into the study.

i) Exclusion Criteria

Patients that were excluded are those who were deemed to be very sick and also those who declined to be part of the study. Health facilities in charge or a representative who declined to participate was exempted in participating in the study. For the 120 County and Sub-County Health Management members, those who were on leave or who declined to participate were excluded.

3.6 Instrumentation and Data Collection

Primary data was collected from all the three respondent categories (citizens, providers, and CHMTs/SCHMTs) using a semi structured questionnaire. Primary data is the data

you collect directly from the individual source, and thus happen to be original in character. Descriptive research mainly depend on primary data either through observation or through direct communication with respondents or through personal interviews, questionnaires or through schedules, (Kothari, 2009).

A semi structured questionnaire was used to collect data from the citizens (see Appendix 3), providers (see Appendix 4) and the County Health Management teams (see Appendix 5). Multiple data collection was important in ensuring data triangulation with a purpose of increasing credibility and validity of study instruments and overall findings. All the tools were researcher administered questionnaires. The semi structured questionnaire had a five point psychometric scale. With responses ranging from strongly agree, agree, not sure, disagree and strongly disagree.

3.7 Pre-test

It is desirable to pre-test the data collection instruments before they are finally used for the study purposes (Kothari, 2009). The data collection instruments were pretested in the neighboring Kiambu County at 20 health facilities contracted by NHIF under capitation in 2017. The sample comprised of 20 facility in charge, 60 patients/citizens, and 35 members of Kiambu County and Sub county Health Management Team. All the respondents in the pretest were purposively be selected.

3.7.1 Reliability

Reliability refers to the extent to which your data collection techniques or analysis procedures will yield consistent findings (Saunders *et al*., 2009). The Cronbach's Alpha reliability test was done to ascertain internal consistency of the research instrument. A coefficient of between 0.7-1.0 was deemed acceptable for consistency.

The closer Cronbach‘s alpha is to 1, the higher the internal consistency reliability, (Sekaran, 2002).

Table 3.2: Reliability Statistics

Variables	Cronbach's Alpha	Number of Items
Citizen Engagement	0.907	39
Health Care Provider responsibility	0.907	43
County Government Role	0.924	39
Communication from NHIF	0.872	9

The reliability results of the pretest indicate that a Cronbach’s Alpha rate achieved was above 0.70 and therefore it was assumed that the data collection tools for the three objectives based on the three respondent categories achieved internal consistency reliability.

3.7.2 Validity

Validity is concerned with whether the findings are really about what they appear to be about (Saunders et al., 2009). The research instrument were tested for face and content validity by sharing the instruments with supervisors, and two NHIF officials who have experience in purchasing, in addition a statistician also reviewed the tools to assess for conceptual and investigative bias. The focus was on the construct and content validity. This was done in order to assess the content adequacy and flow and the accuracy with which an instrument measures the factors under study. After the pretest, the questions that were not well understood, and which made the reliability results to be low were revised to enhance clarity. Some questions that were negatively worded were converted to positive wording for example under citizen engagement, “I have ever complained about the services I received” changed to “I have never complained about the services

I received" The citizen questionnaire was also shortened from 50 items under Likert scale to 39 items.

3.8 Operationalization of Variables

The data type and tools for data collection for the study variables are presented in Table 3.3.

Table 3.3: Operationalization of Study Variables

	Variables	Indicators	Type	Data collection tool
Independent Variables	Citizens Engagement	• Knowledge of NHIF benefit package • NHIF Communication to the citizens, • Citizen Views and values, • NHIF Accountability to the citizens • Health Provider choice by citizens.	Likert scale	Semi-Structured questionnaire
	Government's role	• National scheme guidelines • Health facility Infrastructure • Adequate Financial resources • Ensuring Accountability of NHIF	Likert scale	Semi-Structured questionnaire
	Provider responsibility	• Accreditation • Service Contracts • Provider payments • Monitor of performance	Likert scale	Semi-Structured questionnaire
Moderating Variable	Communication	• Citizens • Health Care Providers • County Health Department	Likert scale	Semi Structured questionnaire
Dependent variable	Access	• Adequacy • Acceptability • Availability • Affordability • Accessibility	Likert scale	Semi Structured questionnaire

3.9 Data Analysis and Management

3.9.1 Data Management

Quantitative data was coded, and data cleaning was done in SPPS version 21 and value labelling done. Different data files were created, these were the citizens data file, health care providers' data file and the County Health Department data file. Regression analysis was used to explain the relationship between the dependent variable and the independent variables.

3.9.2 Data Analysis

This research had three specific objectives covering citizens, health care providers and County government respectively. Each specific objective had five specific aims. Each specific objective had a separate respondent category. Each respondent category had separate independent variables but the dependent variable questions were similar among all the respondents. Results of each respondent category are presented separately.Descriptive statistics were used to describe the general characteristics of the study population by using frequencies and percentages. Data analysis was based on the study hypotheses. Bivariate analysis using logistics regression and Pearson's Chi square was used to compare the variables for factor analysis between the each independent and the dependent variable. An adjusted odds ratio at 95% confidence was used to test the strength of association. The threshold for statistical significance (*p-value*) was set at $p< 0.05$. Multivariate analysis using logistics regression was used to correlate the independent variables and the dependent variable in a combined relationship. Logistic regression is used when the dependent variable is categorical. In order to undertake the bivariate and multivariate logistic regression analysis the Likert

based questions were recoded from five point Likert scale to binary variables. This was guided by the dependent variable which was access to NHIF Primary care health service. It was assumed that the patients can have access or no access to NHIF Primary care health service, therefore the 3-Not sure, 2-Disagree, and 1-Strongly disagree responses were recoded into (0) indicating no access, while else 5-Strongly agree, 4-Agree responses were recoded into (1) implying access. Similar recoding was done for all the independent variables.

The logistic model was expressed as:

$$f(z) = 1/(1+e^{-Z})$$

Where Z is a linear combination of the covariates expressed as:

$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$

X_1, X_2, X_3, X_4, X_i= Independent Variables

β_0 = is the intercept

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_i$=are the estimates of increase in the log odds of the dependent variable (Access to NHIF primary care health services) per unit increase in the independent variables. If the odds ratio = 1, then it is concluded that, the independent variable does not affect the dependent variable. If the odds ratios are greater than one, then the independent variable is associated with higher risk of the dependent variable and if odds ratio is less than one, then the independent variable is associated with less risk of the dependent variable or the independent variable lowers the risk of Access to primary care. Finally, the analyzed data is presented in form of tables, pie charts, and bar graphs.

Citizen Engagement variables

$$f(z) = 1/(1+e^{-Z})$$

$Z = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5$…… Equation 1

X_1 = Citizens knowledge of NHIF benefit package

X_2= NHIF Communication to the citizens

X_3= Citizen Views and values

X_4= NHIF Accountability to the citizens

X_5= Choice Health Care Provider by citizens.

Provider responsibility variables

$$f(z) = 1/(1+e^{-Z})$$

$Z = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5$……Equation 2

X_1 = NHIF Communication to Primary Care Provider

X_2= NHIF Accreditation

X_3= Services Contract with NHIF

X_4= Provider Payment by NHIF

X_5= Monitoring of Primary Provider Performance

County Government Role variables

$$f(z) = 1/(1+e^{-Z})$$

$Z = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5$ ……Equation 3

X_1 =NHIF Communication to CHMTs/SCHMTs

X_2= Guidelines on Implementation of Primary Care Health Services

X_3= County Health Facility Infrastructure

X_4= Adequate Financial Resources

X_5= NHIF Accountability to County Health Management

3.10 Ethical Approval

Approval was sought from a number of institutions. These were, the Kenya Methodist University Scientific and Ethics Review committee in Appendix 6, The National Council of Science and Technology (NACOSTI/P/17/79210/15823) in Appendix 7, and the County Director of Health in both counties in Appendix 8-10. Approval was also sought from facility in charge of the sampled facilities. Informed consent was sought from the respondents, confidentiality, voluntary participation and anonymity was assured to the respondents, refer to the consent form in Appendix 1.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This study sought to establish the effects of National Hospital Insurance Fund's purchasing mechanism on access to primary care health services in Kenya, and the specific objectives were to determine the effect of citizens' engagement, health care providers' responsibilities and County government's role on access to primary care health services under the NHIF National. This chapter represents the results and findings of the study in line with the study objectives.

The first objective was on effect of citizens' engagement on access to primary care health services under the NHIF National. The results present the demographic characteristics of the respondents, followed by the descriptive statistics of the study variables, followed by hypothesis testing using chi-square, bivariate and multivariate analysis.

The second objective was on effect of implementation of provider responsibility on access to primary care health services under the NHIF National. The results present the demographic characteristics of the respondents, followed by the descriptive statistics of the study variables, followed by hypothesis testing using chi-square, bivariate and multivariate analysis.

The third objective was on effect of implementation of County Government's role on access to primary care health services under the NHIF National. The results present the

demographic characteristics of the respondents, followed by the descriptive statistics of the study variables, followed by hypothesis testing using chi-square, bivariate and multivariate analysis. The fourth objective was on the moderating effect of communication on citizens' engagement, provider responsibility and the County Government role in purchasing primary care health services under the NHIF National. The results present the models of each objective with and without communication.

The study data was collected using semi-structured questionnaires with a five point Likert scale (See Appendix 3, 4, and 5). The five point Likert scale responses were further simplified by recoding them into binary variables. Strongly agree and agree responses were recoded as (1) indicating agreement to access while Not sure, disagree and strongly disagree were recoded as (0) indicating disagree, a patient who was not sure of services was likely not to access services, and this was the reason why they were classified under disagree. The binary coding was guided by the dependent variable which was access to NHIF primary care health services. This is because patients can be deemed to have access or no access to primary care health services.

4.2 Study Response Rate

The study had three respondent categories comprising of patients/citizens, health care providers and members of County Government Health Department. The patients' category comprised of a sample size of 426 respondents. A response rate of 395(93%) was achieved. The provider category comprised a sample size of 72 health care providers, this category achieved a 66(92%) response rate. The County Health management teams comprised 120 respondents, a response rate of 115(96%) was achieved.

4.3 Citizens' Social Demographic Characteristics

Citizens' demographic characteristics considered in this study were the age, sex, county of residence, level and type of health facility they were drawn from, level of education, marital status, and employment status. Results are citizen's county, level and type of health facility, & NHIF membership are presented in Tables 4.1.

Table 4.1: Citizen's County, Level and Type of Health Facility, & NHIF Membership *(n=395)*

	Characteristics	**n**	**%**	χ^2	***p-Value***
County	Nakuru	227	57	8.813	0.003
	Nyandarua	168	43		
Level of Health Facility	Facility Level 2	59	15	83.147	0.001
	Facility Level 3	164	42		
	Facility Level 4	118	30		
	Facility Level 5	54	14		
Type of Health Facility	Public	145	37	13.934	0.001
	Mission	97	25		
	Private	153	39		
NHIF Membership	Principal	324	82	162.048	0.001
	Dependent	71	18		
Registered Dependents	Yes	315	80	139.81	0.001
	No	80	20		

Most of the citizen respondents 227(57%) were from Nakuru county, most 164(42%), 153(39%) were from Level 4 health facility and private health facilities respectively. Results indicate that NHIF has contracted level 2, 3, 4 and 5 facilities to provide National Scheme outpatient services. With regard to NHIF status, majority were principle NHIF members 324(82%), had registered all their dependents 315(80%), and

had more than five members feeding from the same pot 128(34%). The study sought information on citizens' demographic characteristics as shown in Table 4.2.

Table 4.2: Citizens Demographic Characteristics *(n=395)*

	Characteristics	**n**	**%**	χ^2	***P-value***
Age	18-25 years	46	12	375.62	0.001
	26-35	185	47		
	36-45	89	23		
	46-55	41	10		
	56-65	23	6		
	66 and above	11	3		
Sex	Male	175	44	5.13	0.024
	Female	220	56		
Level of Education	None	8	2	160.62	0.001
	Primary	61	15		
	Secondary	99	25		
	Certificate	49	12		
	Diploma	109	28		
	Graduate	58	15		
	Post Graduate	11	3		
Marital Status	Married	245	62	692.70	0.001
	Cohabiting	11	3		
	Single	105	27		
	Separated	16	4		
	Divorced	6	2		
	Widowed	12	3		
Employment Status	Employed	231	58	377.73	0.001
	Self employed	152	38		
	Student	12	3		
Monthly Household Income	less than 10,000	122	31	191.49	0.001
	10,001-20,000	129	33		
	20,001-30,000	63	16		
	30,001-40,000	38	10		
	40,001-50,000	16	4		
	50,001 and above	21	5		
Household members	1	62	16	329.41	0.001
	2	52	13		
	3 and 4	152	37		
	More than 5	128	34		

There was a significant difference among the respondents for the demographic characteristics as indicated by a $p<0.05$.Results revealed that majority of the respondents 274(70%) were between 26-45 years and majority were female 220(56%). Over half of the respondents 251(64%) held college education i.e. above certificate qualification, 227(58%) of which 109(28%) held diploma qualification. Majority of the respondents were married 245(62%) and most had formal employment 231(58%). More than half of the respondents 251(64%) had an income below KES.20,000.

The study results indicate that being married, being employed, having education beyond secondary school, may have an influence on NHIF uptake, this is because majority of the respondents were under these categories. The results of this study are in agreement with a study on determinants of health insurance ownership among women in Kenya by Kimani, Ettarh, Warren, and Bellows, (2014), who established that being employed in the formal sector, being married, having secondary education or higher, being older in age and having more than five members of household were associated with having health insurance. Similar study among women in South Africa showed similar results, on how these factors influenced uptake of health insurance, (Kirigia et al., 2005).

The study results only included citizens registered with NHIF, however the results indicate that most of those registered under NHIF National scheme may be deemed to be better off in the society, i.e. married, educated and employed. There is need to consider whether the social insurance is pro-poor as we can see a tendency to favor the people perceived to be better off in the society for example the employed and educated visa a vie the less educated and those in the informal sector.

4.4 Citizens Descriptive Statistics

The study objective that was addressed under citizens was to determine the effect of citizens' engagement on access to primary care health services under NHIF national scheme. In order to accomplish this objective, citizens drawn from the various sampled health facilities were asked to respond to questions which addressed the following specific objectives; citizens' knowledge of the benefit package, NHIF's communication to the citizens, whether citizens views and values are taken into account by NHIF in its decision making, NHIF's Accountability to the citizens, Choice of health provider and finally the citizens also responded to questions on access to NHIF outpatient services.

4.4.1 Access to NHIF Primary Care Health Services

Access factors pertain to supply-side features of health systems and organizations, to demand-side features of populations, and to process factors describing the ways in which access is realized, (Levesque et al., 2013). This study focused on dimensions of access as perceived by (Levesque et al., 2013) and (Evans et al., 2013) which are availability, acceptability, physical accessibility, financial affordability and approachability. Responses were also sought on whether the respondents had access to all NHIF outpatient services. This was determined by responses on services availability, drug availability, services affordability, distance to seek health services and the cost incurred in accessing the NHIF outpatient facility. Responses are indicated in Table 4.3

Table 4. 3: Citizens' Perception on Access to NHIF Primary Care Health Services

Access to Primary Care Services	Disagree	Not Sure	Agree	Chi square	P-value
	n (%)	n (%)	n (%)		

a.	NHIF outpatient services are always available	108 (27)	30 (8)	257 (65)	126.66	0.001
b.	NHIF prescribed medicine(s) are always available	188 (48)	42 (11)	165 (42)	34.386	0.001
c.	This facility is close to my home	71 (18)	10 (3)	314 (79)	347.52	0.001
d.	The cost/fare to the facility is affordable	41 (11)	16 (4)	338 (86)	408.56	0.001
e.	The services are affordable	226 (57)	26 (7)	143 (36)	103.39	0.001
f.	The waiting time is often not long	111 (28)	28 (7)	256 (65)	108.99	0.001
g.	Am always treated with courtesy	42 (11)	18 (5)	335 (84)	350.94	0.001
h.	I have access to ALL NHIF outpatient services	133 (34)	44 (11)	218 (56)	52.89	0.001

The results show that majority 257(65%) of the respondent agreed to NHIF outpatient services being available, however 188(48%) indicated that NHIF prescribed medicine(s) are not always available, or they were not sure of drugs availability 42(11%). Majority 314(79%) of the respondent agreed that the health facility they had chosen was close to their home and that the cost/fare to the facility was affordable 338(86%). However most 226(57%) said the NHIF outpatient service were not affordable, since they were charged for services such as drugs, laboratory tests and x-rays. Most indicated that the waiting time is often not long 256(65%) and that they were always treated with courtesy 335(74%). Despite lacking drugs and being charged for services, most 208(56%) of the respondents indicated that they had access to all NHIF outpatient services. The results in Table 4.3 are presented in Figure 4.1.

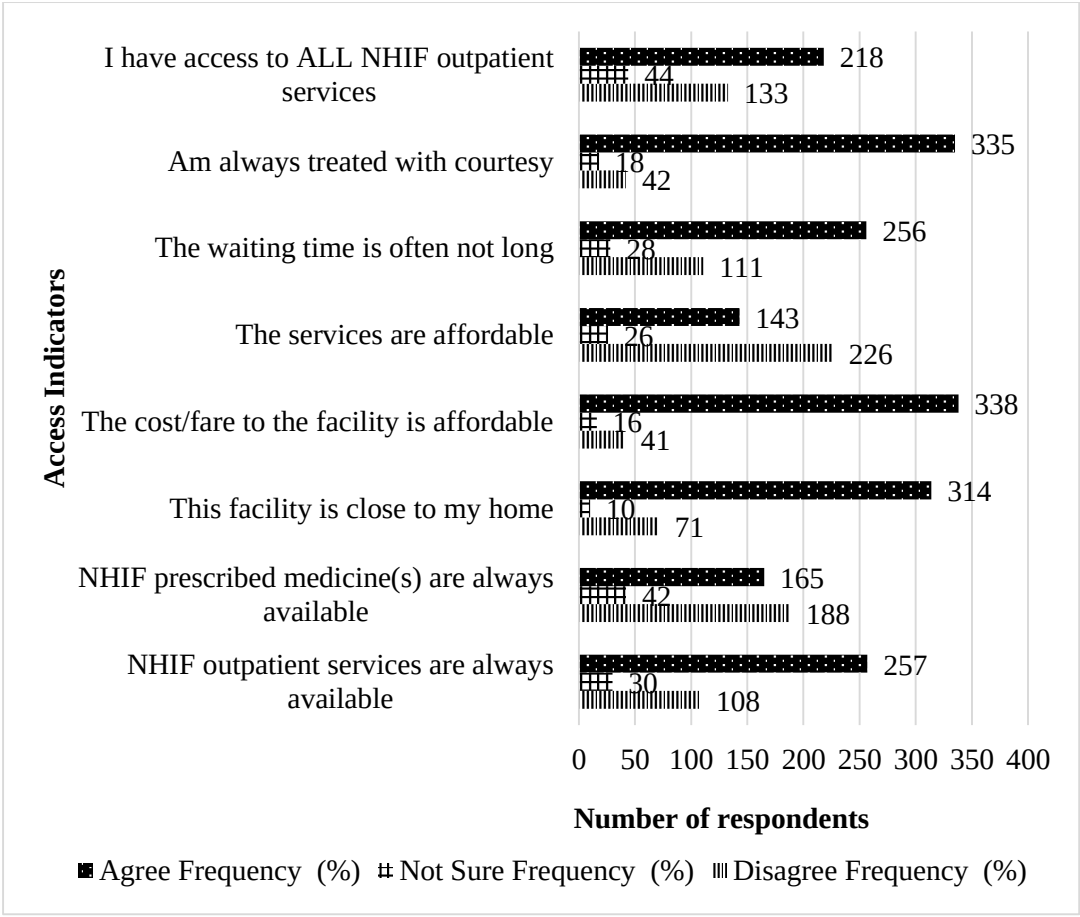

Figure 4.1: Citizens' Perception on Access to NHIF Primary Care Services

The respondents in this study indicated that primary care services were available and that they had received all the NHIF outpatient services, however 188(48%) indicated that drugs were not available. This may imply that access was not fully achieved. The results of this study indicate that services are not all affordable as majority indicated that they were asked to pay for some services. However they mentioned that the fare to the health facility was affordable. Evans et al., (2013) states that geographical accessibility requires that the health services be physically accessible, this is fulfilled when the services are available, of good quality and located close to people. Majority of the respondents indicated that the primary care facility was close to their homes and

the fare to the facility was affordable this implies that they had geographical accessibility.

4.4.2 Citizens' Knowledge of the Benefit Package

The study sought to establish citizens' knowledge of the health benefit package under NHIF National scheme, as this was deemed to influence citizens' access to primary care services. The findings are shown in Table 4.4.

Table 4. 4: Citizens' Knowledge of NHIF National Scheme Benefit Package

Citizens' Knowledge of NHIF National Scheme Benefit Package	Disagree	Not Sure	Agree	Chi square	*p-value*
	n (%)	n (%)	n (%)		
I am always entitled to General consultation	8(2)	10(3)	377(95)	614.86	0.001
I am always entitled to Treatment of local diseases	22(6)	0(0)	373(94)	373.35	0.001
I am always entitled to Basic Lab investigations	21(6)	48(12)	326(82)	356.40	0.001
I am always entitled to Prescription and administration of drugs as per KEPH guidelines	31(8)	28(7)	336(85)	364.96	0.001
I am always entitled to Health education, counseling, ongoing support	60(15)	99(25)	236(60)	112.58	0.001
I am always entitled to Management of uncompleted STIs	44(11)	105(27)	246(62)	170.94	0.001
I am always entitled to Minor surgical procedures under local anesthesia	48(12)	84(21)	263(67)	170.25	0.001

There was a general agreement on citizens' knowledge of all health benefits under this study. Majority of the citizens were knowledgeable on their entitlement to general consultation 377(95%), treatment of local disease 373(94%), basic laboratory investigations 326(82%), prescription and administration of drugs 336(85%), health education, counseling, ongoing support 236(60%), management of uncomplicated STIs

246(62%) and minor surgical procedures 263(67%). However it was evident that some of respondents were not sure of their entitlement in three areas i.e. health education, counseling, ongoing support 99(25%), management of uncomplicated STIs 105(27%) and minor surgical procedures, 84(21%), the reason may be due to lack of knowledge of the citizens to their entitlement to the three NHIF benefits. There was a significant difference in the way the respondents responded to the various questions under this variable, as shown by the $p<0.05$.

4.4.3 Citizens' Perception on Communication by NHIF

The study also sought to establish the information sharing mechanisms by NHIF to the Citizens. The results are shown in Table 4.5. There was a significant difference in the way the respondents responded to the various questions under this variable, as shown by the $p<0.05$. There was a general agreement that NHIF provides the citizens with all the information they require to make informed decisions 224(57%), and that NHIF explains to them the health services they are covered for 228(58%). However majority 212(56%) disagreed or were not sure on the fact that NHIF communication is regular.

Table 4.5: Citizens Perception on Communication by NHIF

NHIF's Communication with Citizens	Disagree	Not Sure	Agree	Chi Square	*p-value*
	n (%)	n (%)	n (%)		
NHIF provides me with all the information I require	133(34)	38 (10)	224 (57)	61.04	0.001
NHIF always explain to me the health services they cover me	132 (33)	35 (9)	228 (58)	71.60	0.001
NHIF communicates to me regularly	162 (41)	50 (13)	183 (46)	19.30	0.001

Effective and efficient communication is crucial in healthcare management, though more than 50% indicated that NHIF communicates to them, over 40% indicated that NHIF communication to them was inadequate. This could hinder access to services. Sieverding, Onyango, and Suchman, (2018), established that due to poor communication from NHIF, clients often did not know which services NHIF covered, and did not understand requirements for coverage of their dependents or how the primary provider system worked under the outpatient capitation scheme, the authors recommended need to sensitize the citizens more.

4.4.4 Citizens' Views and Values under NHIF National Scheme

The respondents' perceptions were sought on whether NHIF takes into account their views and values by engaging the citizens in the community or if there are any feedback mechanisms that NHIF has set to collect their views and values. See Table 4.6. There was a significant difference in the way the respondents responded to the various questions under this variable, as shown by the $p<0.05$. Majority of the respondents agreed to the views that they are aware of the kind of services the hospital should provide to them 243(62%) and that they are aware of NHIF health benefits 209(53%). However, 253(64%) disagreed that NHIF often visits the community to enquire on their needs. Majority of the respondents 231 (58%) also disagreed that NHIF has feedback mechanisms that they can use to give their views and values to NHIF. More than half of the respondents, 231(58%) disagreed to the fact that they have a chance to give feedback to NHIF on services that they receive. Moreover, 267(68%) of the respondents indicated that they have never given any feedback and therefore majority 216(55%) did not know if feedback given can be used to improve the health services in the facility.

Table 4.6: NHIF seeking Citizens' Views and Values

Citizen Views and Values	Disagree	Not Sure	Agree	Chi square	p-value
	n (%)	n (%)	n (%)		
NHIF comes to the community to enquire on our needs	253(64)	74(19)	68(17)	133.92	0.001
I am aware of the kind of services the hospital should provide to me	81(21)	71(18)	243(62)	86.66	0.001
I am fully aware of the NHIF health benefit package	112(28)	74(19)	209(53)	39.62	0.001
I always have a chance to give feedback to NHIF on services that I receive	231(58)	56(14)	108(27)	58.00	0.001
I have ever given feedback on services I have received	267(68)	40(10)	88(22)	136.63	0.001
The feedback given was used to improve the health services in the facility	216(55)	99(25)	80(20)	74.03	0.001

Similar findings were found by (Munge et al., 2017), the NHIF Act doesn't have provision for eliciting feedback form citizens, and although, NHIF has a phone line which is free for the public to call, this line is operated for 24 hours a day, any attempts to call the number by the authors, during the study period was not successful. This may hinder feedback to NHIF and further improvement of services. The results of this study are also in agreement with Busse et al., (2007) who indicated that though importance of population needs assessment is highly recognized, this function is not often carried out and where it exists, results are often not included into purchasing decisions. These shortcomings reflect absence of public health function in the health system and where it exist, there is often failure to integrate this function within purchasing decision (Busse et al., 2007).

4.4.5 NHIF's Accountability to Citizens under National Scheme

The respondents were also asked to evaluate their opinion on whether NHIF is accountable to them in the areas of; there being any mechanisms to report on use of funds, members of the public being allowed to contribute to NHIF decisions, members being aware of what NHIF buys with their monthly contribution, members being fully aware of their patients' rights with regard to NHIF membership, NHIF providing ways for people to raise their complains and responding to these complains. Results are presented in Table 4.7.

Table 4.7: Enforcing NHIF's Accountability by Citizens

NHIF's Accountability	Disagree	Not Sure	Agree	Chi square	*p*-value
	n (%)	n (%)	n (%)		
Members of the public are allowed to contribute to NHIF decisions	196 (50)	100 (25)	99(25)	47.19	0.001
I am fully aware of what NHIF buys with my monthly contribution	224(57)	83(21)	88(22)	107.09	0.001
NHIF has public reporting mechanisms on use of funds	230(58)	105(27)	60(15)	142.76	0.001
I am fully aware of my patients' rights with regard to NHIF membership	106(27)	72 (18)	217(55)	39.87	0.001
NHIF has provided ways for people to raise their complaints	138(43)	105(27)	122(30)	19.65	0.001
NHIF always responds to public complaints	126(31)	162(41)	107(27)	116.03	0.001
I am able to track down any complaint given to NHIF	176(45)	147(37)	72(18)	107.65	0.001

Half 196(50%) of the respondents disagreed to members of the public being allowed to contribute to NHIF decisions. While citizen representation in NHIF board is there in Kenya, citizens seem not to be aware of how they are represented. (Busse et al., 2007)

indicates that in many European Countries, consumers have a formal representation in purchaser organizations, though there challenges in determining which is the best group to represent consumers in purchasers boards.

Majority of the respondents 224(57%) were not aware of what NHIF buys with their monthly contribution, neither 230(58%) were they aware of any mechanism NHIF has to publicly declare the use of citizens' funds. These findings are similar to those of Abolghasem et al., (2018), who found that lack of sufficient transparency in financial resources is a major challenge in strategic purchasing. Further, (Honda, 2014), established that one of the accountability mechanisms is public reporting by the purchaser on its use of funds. Majority 217(55%) were however aware of their patients' rights with regard to NHIF membership, however they disagreed 138(43%) or were not sure 105(27%) of NHIF having ways for people to raise complaint. Majority 162(41%) were not sure as to whether NHIF responds to public complaints. There was a significant difference in the way the respondents responded to the various questions under this variable, as shown by the $p<0.05$.

These findings are similar to a study in China, Indonesia and Phillipines by Honda et al., (2016) who established that though accountability mechanisms, such as reporting and complaints systems have been established some mechanisms do not function effectively and further improvement is required if members' needs and preferences are to be met. The authors also established that in the Philippines, systems to allow members to articulate preferences, needs and complaints are not well established. Further, the results of this study can be explained by (Munge et al., 2017) who established that the NHIF Act does not provide for feedback or complaints mechanisms

for beneficiaries or members, however the board of directors is composed of key stakeholders including labour unions who represent the citizens. Furthermore, NHIF has no public forum for reporting performance. While there was evidence that these feedback mechanisms did work, for example resulting in the redesign of the enrolment form, it was unclear what processes were in place to regularly incorporate this feedback in benefit package design and other aspects of purchasing performance. Though changes to the benefit package and premium rates were based on member feedback, the process of implementation of these changes is met with stiff opposition from labour unions and the general population.

Results of patients knowledge of their rights was in agreement with (Busse et al., 2007) who indicated that one of the ways to enhance the role of consumers in purchasing and to hold the purchaser accountable is to specify the consumers' and purchasers' roles. This study can imply that the patients are aware of their rights and responsibilities. These authors also indicate that one way to hold the purchaser accountable and be responsive to consumers is through putting in place complaint and feedback mechanisms, so as to influence the purchaser's decisions. There was a gap in the area of complaint mechanisms as most respondent indicated that they were not aware of any complaint mechanism in place, neither were they aware if NHIF responds to public complaints. Most National health systems have put in place complaint mechanisms however, there lacks legally enforceable enforcements in most of them, thus reducing the scope for consumers to declare whether provision or non-provision of health services is appropriate, (Figueras et al., 2005).

A critical analysis of purchasing mechanism in China's Rural Health Insurance Scheme- which covers over 97% of the total rural population, showed that the success of the scheme was attributed to the scheme's policy which natures the relationship between the scheme (purchaser) and the citizens which requires the county scheme's office to elicit feedback from the insured in the design of the benefit package, claims methods, and fund management, to reflect citizens' health needs and preferences. The actual mechanisms available in the counties studied included NCMS Hotline for enquires and complaints, and publicizing of the fund expenditures, (World Health Organization, 2016)**.**

4.4.6 Citizens' Choice of Health Provider under National Scheme

Perception of the respondents was also sought on whether NHIF communicates to the citizens on the rules of selecting health care facilities, and whether citizens understand these rules. In addition respondents were asked if they selected the NHIF contracted/outpatient facilities at their own free will. Findings are presented in table 4.8.

Majority of the respondents 257(65%) agreed that NHIF communicates to them the rules of selecting a health facility and that they 256(64%) understand these rules. Majority 369(94%) also agreed to have chosen the health facility at their free will. More than a half, 210(53%) disagreed on the question that a person can choose more than one health facility under NHIF, this confirmed that they knew the rules of selecting health facility.

Table 4.8: Perception of Citizens' Choice of Health Provider

Citizens' Choice of Health Provider	Disagree	Not Sure	Agree	Chi square	p-value
	n (%)	n (%)	n (%)		
NHIF always communicates the rules for selecting a health facility	83(21)	55(14)	257(65)	104.99	0.001
I understand the rules on selection of a health facility	84(22)	55(14)	256(64)	110.84	0.001
I chose this health facility at my free will	11(3)	15(4)	369(94)	582.35	0.001
I can choose more than one health facility under NHIF	210(53)	79(20)	106(26)	65.65	0.001
NHIF provides adequate number of health facility for the patient to choose from	79(20)	81(21)	235(59)	81.70	0.001
I have ever changed my health facility under NHIF	201(51)	18(5)	176(44)	74.13	0.001

Majority 235(59%) confirmed that NHIF provides adequate number of health facility for the patient to choose from and 201(51%) also indicated that they have never changed their outpatient facility under NHIF. These study finding are in agreement with those of (Busse et al., 2007), who established that in most countries consumers have a right to choose a primary care provider. The authors further clarify that in some countries such as Sweden patients are permitted to choose a hospital outside the county of residence, while else those under English NHS have their hospital choices increased, this is not similar to the Kenya where citizens are required to choose only one primary care provider per beneficiary under the NHIF National scheme.

4.4.7 Citizens' Binary Recoded Responses

Data on citizen variables was collected using a Likert scale. Guided by the dependent variable which was access, the five point Likert scale data was recoded into binary

variables. It was assumed that the patients can have access or no access to primary care health services. Recoding was also done for all the independent variables (knowledge of benefit package, NHIF communication to the Citizens, Citizens views and values being taken into consideration, NHIF accountability to the citizens', and citizens' choice of primary care provider. Results are presented in Figure 4.2. Access to primary care should be guaranteed for every member of the NHIF. However this study indicate that 111(28%) of the respondents did not perceive the services to be accessible. This was attributed to unavailable drugs and being charged for services at point of access despite having prepaid for the primary care services. Similar findings were found in a study on challenges of strategic purchasing of healthcare services in Iran Health Insurance Organization by (Abolghasem et al.,2018), where participants perceived issues affecting strategic purchasing to be lack of accessibility, affordability and availability of services. Further Obadha, Chuma, Kazungu, and Barasa, (2019) in their study in Kenya established that one of the incentives for providers under capitation payment is to underprovide services in order to maximize profits, Gathu, Muthoni Mwangi, and Oluoch, (2016) in a research on social insurance uptake in Nyeri County found that patients who had ceased being enrollees of NHIF were willing to rejoin the scheme if they would be guaranteed availability of drugs, and if the quality of care would be improved.

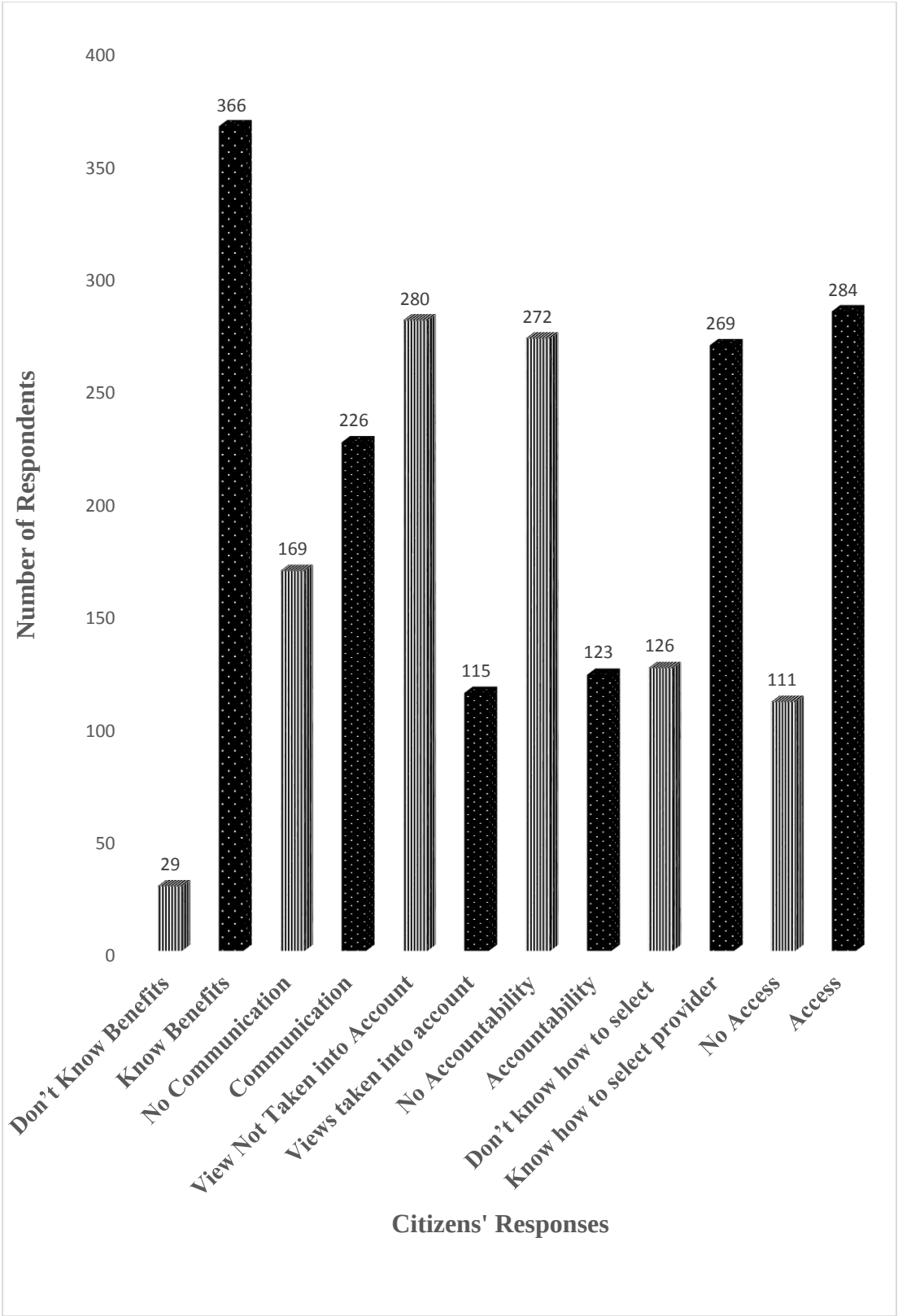

Figure 4.2 Citizens' Engagement in Purchasing of Primary Care Health Services

Some of the respondents in this study cited bad staff attitude as one of the reasons for dissatisfaction with the NHIF primary care health services. 284(72%) agreed to have access to primary care. The findings of this study are in agreement with (Levesque et al., 2013), who established that patients can be said to have access to health services if these services are adequate, available, and acceptable and if the patients have geographical access. Availability can be measured by the presence of that health services, either the physical space or those working in health care roles, can be reached both physically and in a timely manner. Adequacy relates to the appropriateness, indicating the type of services provided and the way in which they are provided i.e. quality of health services and its integrated and continuous nature.

On knowledge of NHIF health benefit package, 366(93%) respondents indicated that they knew the NHIF health benefit package. According to Carrin and Chris, (2004), citizens' pooled contributions of a SHI system are used to purchase a set of health benefits or interventions, which the insured members are all entitled to. The authors stated that often the beneficiaries are not aware of their entitlement and patients always rely on the health care provider to establish the kind of services they should receive, as they recognize the health care provider to be better informed to make such an establishment. The results indicate low knowledge on entitlement in two areas these were entitlement to management of uncompleted STIs and minor surgical procedures under local anesthesia. A study by Gathu et al., (2016) showed that knowledge of benefit package was not associated with patients accessing health services, this is because, patients knowledge of their entitlement does not guarantee access to health services, as the actual access to the services is also influenced by other factors such as the actual encounter with the health provider.

On communication by NHIF to the citizens, majority 226(57%) indicated that NHIF provides them with information they require to make informed decisions and that NHIF explains to them the health services they are covered for. However, the number of those who did not agree 169(43%), was a result of NHIF not making the communication to the citizens regular. These results are in agreement with (Figueras et al., 2005), who indicated that key strategic purchasing actions in relation to citizens or population served include informing the population of their entitlements and obligations, this may be implied to have taken place as majority of the respondents confirmed to have received information from NHIF despite saying that it was not regular. Further, these results can be supported by (Munge et al., 2017), who stated that NHIF communication to citizens is through published detailed information on the NHIF website and advertisements widely in the media, however NHIF's use of its website, newspapers and media pronouncements to inform the populace of its service entitlements limits the reach of its messages to those who had access to these media, and this may explain the 43% respondents who indicated NHIF does not communicate to them.

The results reveal that 383(97%) of the respondents were aware of their service entitlement despite 170(43%) indicating that NHIF communication to them was not adequate. This implies that communication of citizens is not solely dependent on NHIF communication mechanisms and strategies, citizens could be relying on information from family and friends. NHIF communication strategies must address context specific issues and dynamics. Progress toward UHC requires local ownership and tailored made strategies for particular settings. Each audience requires tailored communication approaches to change their knowledge, attitudes, and behaviors. These actions may engage stakeholders in information sharing, conversation, and/or shared learning, with

the aim of making decisions or influencing behavior changes, this is as stated by (Joint Learning Network for UHC et al., 2018).

On whether NHIF takes into account citizens' views and values, 280(71%) were of the view that NHIF does not take into account their view and values, given that the patients are not aware of any feedback mechanisms available for them to give their opinions on the services they receive under NHIF national scheme. The results of this research are in agreement with (Busse et al., 2007) who indicated that purchasers' decisions often do not reflect patients societies' values. Some countries like Norway, Sweden, and Netherlands have come up with innovative experiences of including citizens' views when deciding which services to provide, however this has proven to be problematic because citizens are frequently averse to reducing care priorities and their views often lack consistency. Further including society values and priorities does not necessarily increase equity and allocative efficiency (Busse et al., 2007).

The findings of this study are further supported by (Munge et al., 2017), who established that no formal needs assessment activities were undertaken in designing NHIF benefit package, in fact, NHIF used a variety of means to determine health needs of the population and inform the design of the benefit package, including customer satisfaction surveys; feedback received from board members and analysis of claims data, these authors recognized that citizen engagement required improvement. Carrin and Chris, (2004) further stated the need for inclusion of citizens' preferences in designing the benefit package. A study by Gathu et al., (2016) established that all the respondents (104) in this study cited to have never been invited into their respective

SHI and CHI meetings, this meant their views and values were not often sought by the insurance scheme.

NHIF accountability to the citizens was not felt by 272(69%) of the respondents. The reason would have been that the citizens were not aware of how they can be involved in NHIF's decision making process, the respondents were also not aware of what NHIF buys with their monthly contributions, neither were they aware on any public reporting mechanisms available for NHIF to report on the use of funds. The result on NHIF accountability establishes an existing gap in accountability. Busse et al., (2007) identified four ways in which a purchaser can be made accountable to the population, these are: by population having a formal representation in the purchaser's board, legislative determination of benefit package, having rules on patients' rights and putting in place complaint mechanisms. These elements except patients' rights legislation were found to be lacking in this study. Figueras et al., (2005) further states that a strategic purchaser must establish ways or means to receive feedback and timely respond to complaints by the population, and report publicly on the use of financial resources besides having other measures of performance.

On choice of primary care provider, 269(68%) of the respondents agreed to knowing how to select an outpatient facility. This is because as indicated in Table 4.8, NHIF communicates to them the rules of selecting a health facility and they understand these rules as confirmed by the response by majority who indicated that one cannot chose more than one NHIF outpatient facility. It is likely that the high level of agreement could lead to increase access to primary by the patients. This is as postulated by (Busse et al., 2007) who indicated that when consumers have a number of health facilities to

choose from, it may increase responsiveness. A major concern was also noted among respondents 126(32%) who indicated that they did not know the rules of selecting a primary provider. These are respondents who indicated that they can chose more than one primary care provider. The reason for inadequate knowledge of provider choice may be as a result of predisposition of their education background or socio-economics status. These words are echoed by (Busse et al., 2007), who indicated that there is evidence that choice of provider tends to benefit the higher (and usually better-informed) social classes and thus may lead to increasing health inequalities, policy response should focus efforts to ensure wider access to information and to support choice among the underprivileged.

Munge et al., (2017) established that, NHIF publishes information about providers and the benefit package through its website and through advertisement on media, this are ways through which NHIF creates and promotes awareness of the citizen entitlements and accredited providers .This is similar to the results of this study, which show that majority of the respondents understood the rules of selecting health providers for primary care providers. There are a few respondent 11(3%) who indicated that they did not chose the facilities they were accessing primary services from, the question remains who chose for them these facilities? Gathu et al., (2016) established that there are SHI patients who find themselves allocated to health facilities they did not voluntarily chose, this led to terminating their enrolment with the SHI.

4.5 Hypothesis Testing of Citizens Responses

4.5.1 Chi Square Measure of Association

Cross tabulations were done to establish whether there was a relationship between each independent variable and the dependent variable. The Chi-Square statistic was used to evaluate tests of independence of the categorical variables. The chi square was used to assess whether an association exists between the dependent and the independent variables. The data recoded from Likert scale to binary variables was used to test the independence of the variables. The results are presented Table 4.9.

Table 4.9: Relationship between Citizen Engagement & Access to Primary Care Health Services

Variable	Sample Size (n)	χ^2	Df	*p*-value
NHIF benefits	395	1.50	1	0.221
NHIF communication	395	33.31	1	**0.001**
Citizen views and values	395	22.65	1	**0.001**
NHIF Accountability to Citizens	395	24.71	1	**0.001**
Citizens Choice of Health Provider	395	40.79	1	**0.001**

The results indicate that NHIF communication to the citizens, determining citizens' views, and values, NHIF accountability to the citizens and Citizens' choice of primary providers were significantly associated with access to primary care health in the two counties of study. The results were significant at $p<0.05$. The *p-value* indicates that these variables were not independent of each other and that there was a statistically significant relationship between the categorical variables. However, the association of benefits and access was not significant with a $p>0.05$. The *p-value* indicates that knowledge of NHIF benefits and access to primary care health services were independent of each other and that there was no statistical significant relationship

between the two categorical variables. The association of communication and access was significant at $p<0.05$.

These findings are in agreement with (Busse et al., 2007) who stated that key strategic purchasing in relation to citizens include the purchaser assessing population health needs, ascertaining citizens' views and values, citizens enforcing the purchasers' accountability and the purchaser increasing citizens' choices. These results are also in agreement with (Figueras et al., 2005), who indicated that informing the beneficiaries of their entitlements and requirements, through communication and information mechanisms is a key strategic purchasing action with relation to citizens. NHIF communicates with citizens through published information on the NHIF website and through advertisements in the media (Munge et al., 2017).

4.5.2 Bivariate Analysis of Citizens Variables

Before carrying out the bivariate analysis it was necessary to test whether the assumptions for logistic regression were satisfied. Assumptions of logistics regression were adapted from (Stoltzfus, 2011), these are first, logistics regression does not require a linear relationship between the dependent and independent variables. Secondly, the error terms does not have to be normally distributed. Thirdly, homoscedasticity is not required, and finally, the dependent variable should not be measured on an interval or ratio scale, but should be a binary variable. The data in this study met these requirements. Holding other factors constant, a bivariate analysis was carried out to determine the effect of each independent variable on the dependent variable, assuming there was no interaction between the independent variables. The results are presented in Table 4.10.

Table 4.10: Relationship between Citizen Engagement & Access to Primary Care Health Services

Variable	B	S.E	Odds Ratio	*p-value*	R^2
NHIF Benefits					
Citizens don't Know of Benefit (ref)			1.000		
Citizens know Benefits	0.486	.400	1.626	0.225	0.005
NHIF Communication with Citizens					
Citizen disagree on communication (ref)			1.000		
Citizen agree on communication	1.325	.236	3.762	**0.001**	0.116
Citizen Views and values					
NHIF does not takes into account (ref)			1.000		
NHIFs take into account	1.441	.320	4.225	**0.001**	0.090
NHIF Accountability to Citizens					
NHIF is not Accountable (ref)			1.000		
NHIF is Accountable	1.462	.311	4.316	**0.001**	0.097
Citizens Choice of Primary Care Provider					
Citizens don't know rules (ref)			1.000		
Citizens know rules	1.470	.238	4.349	**0.001**	0.136

Significance P<0.05 Sample size= 395

Table 4.10 shows that citizen engagement factors had a significant relationship with access to primary care health services under NHIF national scheme. The study established that NHIF Communication with Citizens (*p<0.001*), Citizen Views and values (*p<0.001*), NHIF Accountability to Citizens (*p<0.001*) and Citizens Choice of Primary Care Provider (*p<0.001*), all had a *p-value* less than 0.05 level of significance and therefore there was a significant association of each of the independent variable with access to primary care health services, in the two counties.

Indeed, where there was communication citizens were 3.762 times more likely to access primary care health services than where there was no communication. Where citizens views and values were taken into account citizens were 4.225 times more likely to

access primary care health services than where there views and values were not taken into account. Where citizens viewed NHIF to be accountable they were 4.316 times more likely to access primary care health services than where they viewed NHIF not to be accountable. Where citizens understood the rules for selecting a primary care provider, they were 4.349 times more likely to access primary care health services than where there the citizens did not know the rules. Joint Learning Network for UHC et al., (2018) emphasized on the need for strategic communication to the citizens in order to promote UHC. Carrin and Chris, (2004) highlighted on the need to have communication mechanisms including using billboards, radio, and pamphlets, television, print media, social media and posters that are context specific, including taking into consideration, gender, age, locality and language that can best be understood by the recipient. Further, (Busse et al., 2007) stated that strategies for citizen empowerment in purchasing include measuring population health needs, establishing citizens' views and values, enforcing purchasers' accountability and increasing citizens' choices.

However there was no significant association between knowledge of NHIF benefits and access. This indicates that the two variables i.e. knowledge of benefits and access are independent of each other. This can be explained by the fact that having a valid NHIF card entitles the patient to access primary care health services in the facility of choice regardless of the patient's knowledge of the benefits or not. However, it is important for the patient to understand the benefits entitled to them as it is the only way they can demand services in case of under provision by the health care provider. Under provision of services is common under capitation (Carrin and Chris, 2004).

Table 4.10 also shows the contribution of each independent variable towards access to primary care health services holding all other factors constant. Citizens' Model Summary of Bivariate Analysis was measured using Nagelkerke R Square (R^2). From the results in Table 4.10, it is evident that citizens' choice of a primary care provider was the leading contributor towards access to primary care health services in the two counties under study, with an R^2 of 0.136 which implies that it accounts for about 13.6% of all the variations in access to primary care health services. This was followed by NHIF communication to the citizens which had an R^2 of 0.116 which implies that communication accounts for about 11.6% of all the variations in access to primary care health services. NHIF Accountability to Citizens had an R^2 of 0.097 implying that NHIF accountability accounted for about 9.7% of all the variations in access to primary care health services, this was followed by citizens views and values which accounted for about 9% of all the variations in access to primary care health services and lastly knowledge of NHIF primary care health services benefits scored the least, by explaining less than 1% of variations in access to primary care health services. The results are in agreement with the chi square test results which indicated that knowledge of benefits did not influence access to primary care health service, $p>0.05$.

4.5.3 Multivariate Analysis

Logistic regression was performed to determine the effects of NHIF benefits, NHIF communication, Citizen Views and values, NHIF accountability, provider choice on the likelihood that a citizen will have access to primary care. Hosmer and Lemeshow Goodness-of-fit test (GOF) was used to decide whether the study model was correctly specified. The results indicate that the logistic regression model was statistically significant, χ^2 (6) = 5.412, $p > 0.05$. If a GOF result is a *p-value* below 0.05, you fail to

accept the prediction model, and vice versa, if the GOF results *p-value* is higher than 0.05, the model passes the test. The model explained 23% (Nagelkerke R^2) of the variations of access to primary care health services and correctly classified 74% of those who had access (Refer to Appendix 11 for detailed results). Results of the odds ratio and the levels of significance are presented in Table 4.11.

Table 4.11: Effect of Citizen Engagement on Access to Primary Care Health Services

Variable	B	S.E	Odds Ratio	*p-value*
NHIF Benefits				
Citizens don't Know of Benefit (ref)			1.000	
Citizens know Benefits	-.007	.443	0.993	0.987
NHIF Communication with Citizens				
Citizen disagree on communication(ref)			1.000	
Citizen agree on communication	.858	.266	2.358	**0.001**
Citizen Views and values				
NHIF does not takes into account(ref)			1.000	
NHIFs take into account	.384	.385	1.468	0.319
NHIF Accountability to Citizens				
NHIF is not Accountable(ref)			1.000	
NHIF is Accountable	.729	.363	2.073	**0.045**
Choice of Primary Care Provider				
Citizens don't know rules(ref)			1.000	
Citizens know rules	1.095	.254	2.990	**0.001**

Significance P<0.05 Sample size= 395 R^2=0.228

Result with a *p-value* of less than 0.05 were interpreted to be significant, in addition a confidence interval with a value including 1 was interpreted not to be significant (Refer to Appendix 11). Therefore three variables met this standard, i.e. communication, NHIF accountability and choice of primary care provider. From these results Communication (*p=0.001*), Accountability (*p=0.045*) and provider choice (*p=0.000*) added

significantly to the model/prediction. The variables in the equation table can be used to predict the probability of an event occurring based on a one unit change in an independent variable when all other independent variables are kept constant.

Communication of NHIF to Citizens was significantly associated with access to NHIF primary care health services. The *p-value* generated was 0.001 which is less than 0.05 level of significance. The study rejected the null hypotheses and adopted the alternative hypothesis. This can be attributed to the fact that NHIF communicates to the citizens regularly using short messages, radio, and newspaper. In addition, NHIF provides citizens with all the information they require to make informed decision including explaining to the citizens the health services they offer to them. The results showed a 2.358-fold increase in the odds of accessing primary care services among those who received communication than those who did not. The results were significant at 5%, Confidence Interval. These results are in agreement with (Munge et al., 2017) who established that NHIF communication to citizens is through published detailed information on the NHIF website and through media advertisements.

NHIF accountability to citizens was significantly associated with access to NHIF primary care health services. The *p-value* generated was 0.045 which is less than 0.05 level of significance. The study rejected the null hypotheses and adopted the alternative hypothesis. The results showed a 2.073-fold increase in the odds of accessing primary care services for citizens who perceived NHIF to be accountable than those who did not. The results were significant at 5%. NHIF accountability was determined by citizens being asked on NHIF reporting on use of funds and existence of complaint mechanisms. Figueras et al., (2005) states that a strategic purchaser accountability to the citizens is

by the strategic purchaser establishing effective mechanisms to receive and respond to complaints and feedback from the population, and publicly report on use of resources and other measures of performance.

Citizens choice of primary care provider was highly significantly associated with access to NHIF primary care health services. The *p-value* generated was 0.001 which is less than 0.05 level of significance. The study rejected the null hypotheses and adopted the alternative hypothesis. This can be attributed to the fact that NHIF always communicates the rules for selecting a health facility and citizens understand the rules on selection of a health facility, respondents also indicated that they chose their health facility at their free will. NHIF provides adequate number of health facility for the patient to choose from. A 3-fold increase in the odds of accessing primary care health services among citizens who understood the rules of selecting a facility, than those who did not was observed in this study. These findings can be supported by Busse et al., (2007) who found out that increased consumer choice of health providers clearly increases responsiveness. In addition, the authors stated that consumers of health services in most countries have the right to choose their primary care providers, which influences access to health services.

The study results indicate that knowledge of NHIF primary care benefits package (p = 0.987) and citizens views and values (p = 0.319) did not contribute significantly to the model. Similar results were reported by Gathu et al., (2016) who showed that knowledge of benefit package was not associated with citizens accessing health services, this is because, citizens knowledge of their entitlement does not guarantee access to health services, as the actual access to the services is also influenced by other

factors such as the actual encounter with the health provider. Busse et al., (2007) indicated that though importance of population needs assessment is highly recognized, this function is not often carried out and where it exists, results are often not included into purchasing decisions. Further (Busse et al., 2007) indicated that purchasers' decisions often do not reflect patients societies' values, while Munge et al., (2017), established that no formal needs assessment activities were undertaken in designing NHIF benefit package.

4.6 Healthcare Providers' Demographic Characteristics

The demographic characteristics of healthcare provider (HCP) respondents on gender, county, facility level and type, age and amount of quarterly capitation per patient registered are presented in Table 4.12. A total of 66 HCP respondents are included in the analysis.

Majority of the healthcare providers interviewed were from Nakuru County 39(59%) and from Level 3 healthcare facilities 35(53%). Majority were male 36(55%).Half of them 33(50%), had diploma education qualification. Majority 41(62%) were above 35 years old and over half 38(58%) were facility in charge. However, despite half of the respondents working as healthcare facility in-charges, there were still 19(30%) who did not know how much capitation was paid by NHIF to their facilities.

Table 4.12: Healthcare Providers' Demographic Characteristics (n=66)

		Frequency	Percent
Sex	Male	36	55
	Female	30	45
County	Nakuru	39	59
	Nyandarua	27	41

Health Facility Level	Level 2	6	9
	Level 3	35	53
	Level 4	23	35
	Level 5	2	3
Health Facility Type	Public	28	42
	Mission	10	15
	Private	28	42
Age in Years	25-35	25	38
	36-45	21	34
	46-55	16	22
	56-68	4	6
Education Level	Certificate	3	5
	Diploma	33	50
	Graduate	18	27
	Post Graduate	12	18
Position in the Facility	Facility in charge	38	58
	Finance in charge	11	17
	NHIF claims Officer	2	3
	Clinician	2	3
	Administrator	13	20
NHIF Quarterly Capitation	250	13	20
	300	47	71
	350	1	2
	400	3	5
	500	2	3

Munge et al., (2017) in their study indicated that, NHIF capitation rates were determined using costing studies and actuarial analysis of NHIF utilization data however these analyses were not in the public domain and it was unclear whether their development included stakeholders. There seem to be a variation in the capitation amount being received by facilities, with majority receiving KES.250 and KES.300. Similar findings were found by (Obadha et al., 2019) who established that NHIF capitation amounts varied according to the ownership of health care providers with private health care providers receiving a higher rate compared to public providers. This

is despite capitation rates per enrollee paid to providers being standardized in July 2017. This was attributed to NHIF not providing full information on how capitation works.

4.7 Healthcare Providers' Descriptive Statistics

4.7.1 HCP Perception on Patients' Access to NHIF Primary Care Services

Access factors pertain to supply-side features of health systems and organizations, to demand-side features of populations and to process factors describing the ways in which access is realized, (Levesque et al., 2013).This study focused on dimensions of access as perceived by (Levesque et al., 2013) and (Evans et al., 2013b) which are availability, acceptability, physical accessibility, financial affordability and approachability. Healthcare providers were asked to rate the statements below with regard to patients' access to primary care health services offered under the NHIF national scheme. The responses are indicated in Table 4.13.

Majority of the respondents indicated that NHIF outpatient services were available 57(87%), that patients have access to all of these services 46(69%), that the prescribed medicines were always available 45(68%), and that the patients are not asked to pay for services 48(72%). Most agreed that most members were registered under facilities close to their homes and that transportation fare to these facilities was affordable for the patients. Almost all 65(98%) indicated that patients are treated with courtesy and that the waiting time was often not long. From these results it is evident that patients are still paying for NHIF outpatient services, drugs are sometimes not available and not all services are available despite the patients paying for the services in advance.

Table 4.13: HCP Perception on Patients Access to NHIF Primary Care Services

Access to NHIF Primary Care		Disagree	Not Sure	Agree
		n (%)	n (%)	n (%)
i.	NHIF outpatient services are always available	9(14)	0(0)	57(87)
ii.	NHIF prescribed medicine(s) are always available	18(27)	3(5)	45(68)
iii.	Most NHIF members have registered with facilities close to their homes	6(9)	5(8)	55(83)
iv.	The cost/fare to the facilities is affordable to majority	10(16)	11(17)	45(68)
v.	Sometimes NHIF patients are asked to pay for registration, medicines, lab, or x-ray services	48(72)	1(2)	17(26)
vi.	The waiting time is often not long	6(10)	1(2)	59(89)
vii.	Patients are always treated with courtesy	1(2)	0(0)	65(98)
viii.	Our patients have access to ALL NHIF outpatient services	16(24)	4(6)	46(69)

Ultimately, this shows that the burden under capitation is passed on to the patients by the healthcare providers. This may be explained by various reasons among them, delay by NHIF to reimburse facilities on time which hinder providers from buying essential commodities, paying salaries and paying suppliers on time, and in addition the low capitation rates offered by NHIF. Similar findings were established by (Sieverding et al., 2018) and (Obadha et al., 2019), who found that NHIF was taking too long to reimburse claims by providers, which led to providers lacking adequate funds to pay suppliers, thus inhibiting provision of services. This study also established that sometimes patients were denied services by provider since providers did not understand the terms of and content of the contract they signed with NHIF. Studies have also found that due to asymmetry of information on purchasing between providers and patients,

providers tend to underprovide health services, more so under capitation, so that they can save on funds, (Carrin & Chris, 2004).

4.7.2 NHIF Communication to Healthcare Providers

Information on whether NHIF communicates with the health providers was sought and the results are as shown in Table 4.14

Table 4.14: NHIF Communication to Healthcare Providers

NHIF Communication to Primary Care Provider	Disagree	Not Sure	Agree
	n (%)	n (%)	n (%)
NHIF provides the health facility staff with all the information they require to make decisions on outpatient services	15(23)	3(5)	48(73)
NHIF always provide adequate information on the benefit package to the patients	20(30)	13(20)	33(50)
NHIF regularly communicates with the health facility on any updates on benefits	8(12)	4(6)	54(82)

The study results indicate that NHIF communicates to both the health providers and the patients. Similar to what the patients indicated, the primary care provider also indicated that the communication is regular. Majority agreed that NHIF communicates to the staff 48(73%), to the patients 33(50%) and that the communication is regular 54(82%). The study results indicate that not all providers were in agreement with the communication indicators. Similar results were observed by (Sieverding et al., 2018), who undertook a qualitative study in 2015 on private healthcare provider experiences with SHI schemes in Ghana and Kenya. The authors established that NHIF did not have clear communication channels with HCP for answering questions and addressing complaints.

Poor communication among HCP was cited as a concern since NHIF did not cascade down information on new policies or changes in premium rates. Obadha et al., (2019) also cited poor communication concerning delay in reimbursement. HCP cited that clients had inaccurate information and expectations on what NHIF outpatient services would be provided under their enrolment.

Joint Learning Network for UHC et al., (2018) records that for UHC to be realized strategic communication must be undertaken to inform all stakeholders involved. Strategic communication is careful, coordinated actions intended to inform and influence key stakeholders. These actions may engage stakeholders in information sharing, conversation, and/or shared learning, with the aim of making decisions or influencing behavior changes. Strategic communication for UHC enables all stakeholders to understand their rights, responsibilities, and opportunities to maximize the benefits of UHC.

4.7.3 Healthcare Providers' Perception on NHIF Accreditation Process

Information was sought on NHIF accreditation processes of primary care health facilities (See results in Table 4.15). There was a general agreement that NHIF contracts accredited health care facilities 60(91%) and that the facility staff understands the accreditation process 35(53%). Majority of the respondents felt that the location of the facility 38(57%) and the wide range of services it offers 55(83%) were key considerations in the accreditation process. There was a tie among those who agreed that staff are engaged in the accreditation process 33(50%) and those who disagreed or were not sure if the facility staff are engaged in the accreditation process. The respondents 61(71%) agreed that they were aware of the duration of the accreditation

period. The results of this study are in agreement with (Munge et al., 2017) who indicated that the contract signed between the NHIF and the health facility specifies the category of the health facility, payment mechanisms and rates, and other terms of engagement.

Table 4.15: Healthcare Providers' Perception on NHIF Accreditation Process

NHIF Accreditation	Disagree	Not Sure	Agree
	n (%)	n (%)	n (%)
NHIF always contracts accredited health facilities to provide outpatient services	3(5)	3(5)	60(91)
The health facility staff understand the accreditation criteria used by NHIF	20(30)	11(17)	35(53)
Location of the facility to the population is a key consideration in accreditation	12(19)	16(24)	38(57)
Wide range of services offered by the facility is always key consideration in accreditation	3(5)	8(12)	55(83)
The health facility staff are always involved in the accreditation process	23(35)	10(15)	33(50)
I am aware of the duration of the accreditation period	13(20)	6(9)	47(71)

4.7.4 Services Contracts between the Healthcare Facility and NHIF

Responses were also sought on existence of a service contract between the primary care health facilities and NHIF, and whether the staff were aware of the terms in the contract. Results are shown in Table 4.16.

Table 4.16: Existence of Healthcare Provider Services Contract with NHIF

Service Contract	Disagree	Not Sure	Agree
	n (%)	n (%)	n (%)
i. Updated contract with NHIF for outpatient services is available	6(10)	2(3)	58(88)

ii.	Facility staff understand the terms in the contract	15(23)	6(9)	45(68)
iii.	Updated copy of the service contract is for reference purposes	9(14)	3(5)	54(82)
iv.	The facility sometimes refers patients for NHIF outpatient services	19(29)	5(8)	42(64)
v.	Contract outlines the equipment the facility should have	10(16)	13(20	43(65)
vi.	Contract outlines the formularies guidelines to be used	6(9)	8(12)	52(79)
vii.	Contract outlines standard treatment guidelines	11(17)	7(11)	48(72)
viii.	The facility always has up to date records of services provided to NHIF patients	8(12)	3(5)	55(83)
ix.	The facility always has access to update data of members and their eligible dependants	20(30)	4(6)	42(64)
x.	Principal members often have registered and declared all their authorized dependants	12(18)	13(20)	41(62)
xi.	Sometimes patients engage in fraudulent activities to unlawfully obtain benefits	18(28)	12(18)	36(54)

There was a general agreement on all indicators on availability of service contract in the primary healthcare facilities. 54(82%) of the respondents indicated that the health facility had an updated contract with NHIF for outpatient services. 45(68%) said the health facility staff understood the terms in the contract with NHIF, that the health facility has a updated copy of the service contract for reference purposes 54(82%), and that the facility sometimes refers patients for NHIF outpatient services 42(64%), this has been cited as an incentive for providers under capitation (Obadha et al., 2019), the service contract outlines the equipment that the facility should have (43(65%), the service contract outlines the formularies guidelines to be used 52(79%), the service contract outlines the standard treatment guidelines 48(72%), the facility always has up to date records of services provided to NHIF patients 55(83%), the facility always has

access to update data of members and their eligible dependants 42(64%), principal members often have registered and declared all their authorized dependants 41(62%), and sometimes patients engage in fraudulent activities to unlawfully obtain benefits 36(54%).

A services contract is the last outcome of a purchasing decision, after the purchaser decides on the services to purchase, and the provider from who beneficiaries will seek care from, them the provider is accredited (Obadha et al., 2019). This study results indicate that some providers were not aware of there being an updated service contract between the health facility and NHIF. A number indicated the staff in the facilities did not understand the terms in the contract or the content thereof, as some cited that it was too bulky to read and understand. It is evident that the facility did not have dated data of the members enrolled by NHIF in their facilities, and those who had enrolled had not declared all their dependents, moreover patients seem to engage in fraudulent activities to obtain benefits.

4.7.5 Capitation Payments by NHIF for Primary care Health Services

Responses were also sought on the providers view on the payments by NHIF. The responses are presented in Table 4.17.

Table 4.17: Capitation Payment to Healthcare Providers by NHIF

	Primary Provider Payment	Disagree	Not Sure	Agree
		n (%)	n (%)	n (%)
i.	I understand the payment rates per beneficiary per year for outpatient care	12(19)	3(5)	61(78)
ii.	The facility continually receives the per capita funds in advance	33(50)	3(5)	30(46)

iii.	The facility always receives the per capita payments from NHIF directly to its facility bank account	5(8)	7(11)	54(82)
iv.	The facility sometimes receives the capitation payments through the County office	52(79)	9(14)	5(8)
v.	facility receives the full funds according to registered members for outpatient services care in the facility	19(29)	17(26)	30(45)
vi.	The NHIF outpatient payments are regular	26(40)	8(12)	32(48)

Majority of the respondents 51(78%) indicated to understand the capitation amount per beneficiary. However half of the respondents 33(50%) indicated there is delay in receiving the capitation funds, which are received directly through the facility bank account, however there seem to be a disagreement 19(29%) on the amount being received in full according to the registered members. Though there is delay there is an indication that the payments are regular, 32(48%). These findings are in agreement with (Obadha et al., 2019),who established that providers had a good understanding of capitation and how it worked, including the capitation amount per beneficiary and the advantages of risk pooling mechanism. Similar findings of delay of funds from NHIF to providers and consequently affecting delivery of services was observed by Gathu et al., (2016), whereby due to delay, health facilities are not able to pay their suppliers, hence delay in delivery of medical commodities to the health facility and to the patients.

4.7.6 Monitoring of Primary Healthcare Provider Performance

Information on monitoring of healthcare provider performance by NHIF and County Health Office was sought and the responses are indicated in Table 4.18. Majority of the respondents agreed to the primary providers having an internal quality improvement (QI) team 49(74%), the QI teams have annual implementation plan 45(68%) , though

majority indicated there was no budget allocated for QI activities all the time 35(53%). There was an equal number of those who agreed 34(51%), that the facility is monitored by the NHIF quality assurance team on a monthly basis against those who disagreed 32(49%). These results on monitoring by NHIF are in agreement with (Munge et al., 2017), who established that NHIF is required by law to regularly inspect contracted facilities annually and to continuously monitor adherence to the standards of care established during its initial inspection. However this does not always happen as the compliance officers largely engaged with employers and rarely interacted with the beneficiaries. Data from interviews suggested that the NHIF's ability to continuously monitor standards or quality of services was limited. One key informant had the following to say: *"...No they don't, what happens with them is that once you have a license from the board then they assume that everything is OK...*" (KII_20_provider).

A health provider in a study by Gathu et al., (2016) noted that NHIF rarely visited facilities they have contracted to provide health services, in fact the authors cited CBHI as the only scheme that regularly monitored provision of services to their patients.

Table 4.18: Monitoring of Healthcare Provider Performance

	Monitoring of HC Provider Performance	Disagree	Not Sure	Agree
		n (%)	n (%)	n (%)
i.	The facility has an internal quality improvement (QI) team	12(18)	5(8)	49(74)
ii.	The QI team has an annual implementation plan	15(23)	6(9)	45(68)
iii.	The facility allocates a budget for QI activities all the time	26(39)	9(14)	31(47)

iv.	The facility staff are aware of SOP guidelines available for delivery of quality services	5(8)	5(8)	56(84)
v.	The facility is monitored by the NHIF quality assurance team on a monthly basis	28(42)	4(6)	34(51)
vi.	The facility always provides unlimited access to NHIF for patients' medical reports	18(28)	10(15)	38(57)
vii.	The facility is regularly supervised by the County Health quality assurance team	10(15)	6(9)	50(75)
viii.	The facility keeps accurate and orderly accounts	2(4)	5(8)	59(89)
ix.	The facility always provides daily reports to NHIF on services provided	14(22)	8(12)	44(67)

Majority agreed to being regularly supervised by the County Health quality assurance team 50 (75%), however, 10(15%) disagreed, these results are in agreement with (Mbau et al., 2018), who established that, there are provision for the county health department to monitor provider performance through quarterly supervision of health care providers. Supervision should be done by the CHMTs and SCHMTs, as well as quality improvement teams, however, supervision of provider performance was not performed regularly due to lack of or inadequate funding, moreover, such activities t were not considered important by the county treasury. Monitoring of provider performance was also limited by lack of clear monitoring frameworks and reporting structures.

The information on the five independent variables (NHIF communication, Accreditation, Availability of a service contract, primary provider payments and monitoring of primary provider performance) and dependent variable (Access to primary care), was recoded from five Likert scale to binary variables. This was guided

by the dependent variable on having access or no access to primary care health services under NHIF National Scheme. The results are shown in Figure 4.2.

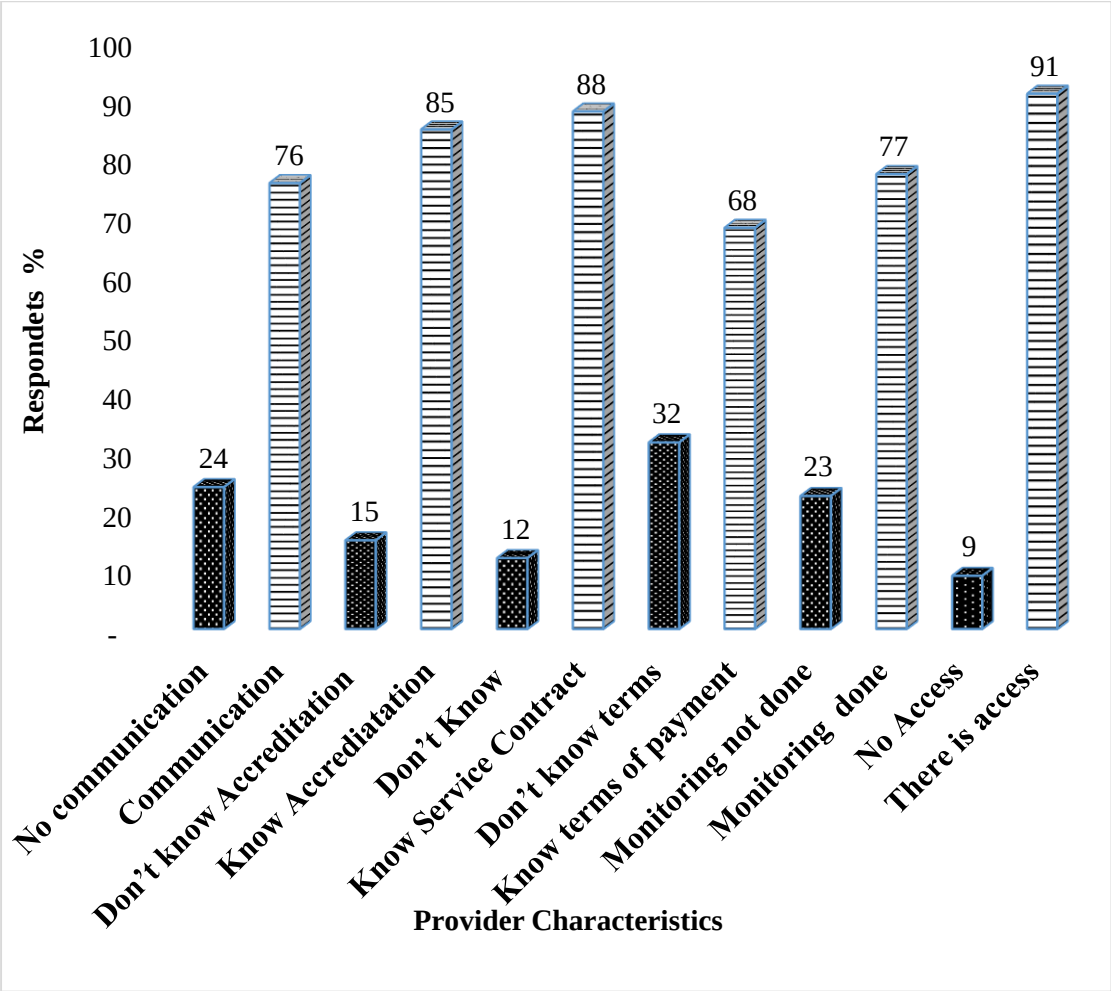

Figure 4.2: Healthcare Provider Engagement by NHIF

The results shown in Figure 4.2 show a general level of agreement with all the study variables. Patients' access to primary care providers scored the highest 60(91%), followed by availability of service contract 88% and the accreditation process 56(85%). However the areas that scored the least were provider payments 45(68%), communication from NHIF 52(76%) and monitoring of the primary provider by NHIF and the government 51(77%). There still providers who seem to differ, and they disagreed on the conditions above. These areas are important to think about as this may hinder patients' access to primary care.

According to Obadha et al., (2019), one of the purchasing decisions involves deciding on the services to be purchased, after which NHIF chooses the type of providers that beneficiaries can seek care from. Accreditation of health care providers is one of the outcomes of NHIF choice of a provider. Finally, in the last purchasing decision, contracts are signed with the selected providers and payment methods are agreed upon. This explains why these too areas scored highly.

The low scores in this areas may be explained by results of Munge et al., (2017) who established that NHIF's accreditation and contracting process, while well intended is very infrastructure oriented and does not address process and outcome aspects of quality of care. Contract enforcement remains a challenge, while other key elements are not comprehensively addressed. Besides there lacks information on how the capitation systems were designed or rates were arrived at, this significant health financing reform lacked the required buy in from the various stakeholders including providers. Also NHIF's ability to continuously monitor standards or quality of services was limited.

4.8 Primary Provider Results of Hypothesis Testing

4.8.1 Chi Square Measure of Association

Cross tabulations were done to establish whether there was a relationship between each independent variable and the dependent variable. The Chi-Square statistic was used to evaluate tests of independence of the categorical variables. The chi square was used to assess whether an association exists between the dependent and the independent variables. The data recoded from Likert scale to binary variables was used to test the independence of the variables. The results are presented in Table 4.19.

Table 4.19: Healthcare Provider Responsibility and Access to Primary Care Health Services

Variable	Sample Size	χ^2	Df	P-value
NHIF Communication	66	2.38	1	0.123
Provider Accreditation	66	6.24	1	**0.013**
Service Contract	66	2.79	1	0.095
Provider Payment	66	3.70	1	0.055
Monitoring provider performance	66	13.80	1	**0.001**

The results indicate that provider accreditation and monitoring provider performance by NHIF and the County government were significantly associated with access to primary care health in the two counties of study. The results were significant at ($p<0.05$). The *p-value* indicates that these variables were not independent of each other and that there was a statistically significant relationship between the independent variables and the dependent variable. Provider payment by NHIF was marginally significant. However the association of NHIF communication and access was not significant with a *($p>0.05$),* in addition, the association of service contract and access was not significant with a ($p>0.05$). This indicates that NHIF communication and service contract were independent of access and that there was no statistical significant relationship between the two categorical variables and the dependent variable.

4.8.2 Bivariate Analysis

Before carrying out the bivariate analysis it was necessary to test whether the assumptions for logistic regression were satisfied. Assumptions of logistics regression were adapted from Stoltzfus, (2011), these are first, logistics regression does not require a linear relationship between the dependent and independent variables. Secondly, the

error terms does not have to be normally distributed. Thirdly, homoscedasticity is not required, and finally, the dependent variable should not be measured on an interval or ratio scale, but should be a binary variable. The data in this study met these requirements. Holding other factors constant, a bivariate analysis was carried out to determine the effect of each independent variable on the dependent variable, assuming there was no interaction between the independent variables. The results are presented in Table 4.20

Table 4.20 show that provider engagement factors had a significant relationship with perceived access to primary care health services. The study found that primary provider accreditation by NHIF *(p<0.05)* and monitoring provider performance *(p <0.05),* had a *p-value* less than 0.05 level of significance and therefore there was a significant association with access NHIF primary care.

Table 4.20: Healthcare Provider Responsibility and Access to Primary Care Health Services

Variable	B	S.E	Odds Ratio	P Value	R^2
NHIF Communication					
NHIF does not communicate to HCP (ref)			1.000		
NHIF communicates to HCP	1.285	.875	3.615	0.142	0.068
Provider Accreditation by NHIF					
HCP doesn't know accreditation process (ref)			1.000		
HCP know accreditation process	2.024	.910	7.571	**0. 026**	0.147
Knowledge of Service Contract					
HCP no knowledge (ref)			1.000		
HCP Provider has knowledge	1.504	.967	4.500	0.120	0.069
Provider Payment by NHIF					
HCP not knowledgeable of payment process(ref)			1.000		
HCP knowledgeable of payment process	1.621	.912	5.059	0.076	0.110
Monitoring provider performance					
HCP not monitored (ref)			1.000		
HCP monitored	3.219	1.149	25.000	**0.005**	0.344
Significance P<0.05			Sample size= 66		

The results are on bivariate analysis agreement with the chi square test results which indicated that only provider accreditation and monitoring provider performance had a significant influence on access to primary care health service, $p<0.05$. Table 4.20 shows the contribution of each independent variable towards access to primary care health services holding all other factors constant.

Providers' Model Summary of Bivariate Analysis is presented using Nagelkerke R. From the results in Table 4.20, it is evident that monitoring provider performance was the leading contributor towards provision of primary care health services in the two counties under study, with an R^2 of 0.344 which implies that it accounts for about 34.4% of all the variations in provision of NHIF primary care health services. This was followed by provider accreditation which had an R^2 of 0.147 which implies that provider accreditation accounts for about 14.7 % of all the variations in provision of NHIF primary care health services. Provider payment had an R^2 of 0.110 implying that capitation payments by NHIF to providers accounted for about 11% of all the variations in provision of NHIF primary care health services, this was followed by service contracts which accounted for about 6.9% of all the variations in provision of NHIF primary care health services and lastly communication by NHIF to providers scored the least, by explaining 6.8% of variations in provision of NHIF primary care health services.

4.8.3 Multivariate Analysis

Logistic regression was performed to determine the effects of NHIF communication, provider accreditation, service contract, provider payments by NHIF, monitoring provider performance on the likelihood that they will guarantee patient access to NHIF

outpatient services. Hosmer and Lemeshow Goodness-of-fit test (GOF) was used to decide whether the study model was correctly specified. The results indicate that the logistic regression model was statistically significant, $\chi 2$ (4) = 3.606, p >0.05. If a GOF produce a *p-value* below 0.05, then prediction model is rejected. If it's higher that 0.05, then the prediction model is not rejected. The model explained 48% (Nagelkerke R^2) of the variance in access to Primary care health services, and correctly classified 92% of those who had access. For the results on GOF, R^2, percentage that was correctly classified, refer to Appendix 13. The results further indicate that in a combined relationship only monitoring of provider performance by NHIF and County government had a significant association with Access to NHIF outpatient services, refer to Table 4.21.

Table 4.21: Effect of Health Provider Responsibility on Access to Primary Care Health Services

Variable	B	S.E	Odds Ratio	*P-value*
NHIF Communication				
NHIF does not communicate to HCP (ref)			1.000	
NHIF communicates to HCP	-1.030	1.454	.357	0.479
Provider Accreditation by NHIF				
HCP doesn't know accreditation process (ref)			1.000	
HCP know accreditation process	1.624	1.333	5.074	0.223
Knowledge of Service Contract				
HCP no knowledge (ref)			1.000	
HCP Provider has knowledge	1.504	.967	0.529	0.656
Provider Payment by NHIF				
HCP not knowledgeable of payment process(ref)			1.000	
HCP knowledgeable of payment process	1.621	.912	18.959	0.063
Monitoring provider performance				
HCP not monitored (ref)			1.000	
HCP monitored	3.219	1.149	31.254	0.024

Significance P<0.05 Sample size= 66 R^2=.48

The results show that monitoring provider performance by NHIF and the County government is significantly associated with access to NHIF primary care health services. The *p-value* generated was .024 which is less than 0.05 level of significance. The study rejected the null hypotheses and adapted the alternative hypothesis. This can be attributed to the fact that most facilities indicated that they were regularly supervised by the County Health quality assurance, though monitoring by the NHIF quality assurance team was not regular. A 31-fold increase in the odds of providing primary care services among the facilities that were monitored against those who were not monitored, was observed in this study. Communication *(p=.479),* Accreditation *(p=.223),* Service contract *(p=.656*) and Provider payments *(p=.063)* did not contribute significantly to the model. The variables in the equation table can be used to predict the probability of an event occurring based on a one unit change in an independent variable when all other independent variables are kept constant.

According to Preker (2007), a purchaser's relationship with health care providers involves; Selection or accrediting providers; establishing, implementing and modifying provider payment mechanisms to promote efficiency and delivery of quality services; monitoring provider performance and acting on under performance; putting in place strategies to promote equitable access to services; developing, managing and using health and management information systems to support decision making. According to Carrin, (2011), providers can effectively provide service if the purchaser regularly pays the provider on timely basis, where government fund the purchaser, the government has a mutual responsibility in ensuring adequate resources are mobilization of resources is done to ensure service entitlements are met. Results of a study in Tanzania on critical assessment of health care purchasing strategies, showed that providers are also

represented on the NHIF board. NHIF management normally visits contracted providers during supervision. Providers are also invited to annual client days. Providers expressed discontent in relation to claims settlements, arguing that their claims have been rejected without proper justifications, and they have no forum through which to channel their complaints, (World Health Organization, 2016).

4.9 County Health Management Demographics

A response rate of 115(96%) was achieved. Majority of the respondents 60(52%) were male and 55(48%) were female. Results show that there was no gender difference in the distribution of the County Health Management during the study. See Table 4.22.

Table 4.22: County Health Management Demographic Characteristics *(n=115)*

Demographic Characteristics	Frequency	Percent
Gender		
Male	60	52
Female	55	48
Age Bracket		
<30 years	17	15
31-40 years	29	25
41-50 years	42	37
51-60 years	27	23
County		
Nakuru	82	71
Nyandarua	33	29
CHMT Level		
CHMT	26	23
SCHMT	89	77
Highest Level of Education		
Certificate	3	3
Diploma	52	45
Graduate	48	42
Master and above	12	10

42(37%) of the respondents were aged between 41 and 50 years and 29(25%) were aged between 31 and 40 year. In addition, 27(23%) of the respondents were aged 51-60 years. This may be attributed to the fact that older age and experience normally goes hand in hand with efficient and effective management. The level of education was considered an important factor in broadening the management capacity of the respondents. Table 4.22 indicate that the respondents had a relatively high level of education with majority having diploma qualification and above, implying that

respondents have the relevant knowledge in their areas of operation within the Counties. (Gadenne, 1998), cites level of education to be a critical success factor in delivery of services.

4.9.1 County Descriptive Statistics

This study established the role of the county government using approach adopted from (Figueras et al., 2005) who noted that key strategic purchasing actions by government to promote strategic purchasing include; establishing clear frameworks for purchaser(s) and providers, filling service delivery infrastructure gaps, ensuring adequate resources are mobilized to meet service entitlements and ensuring accountability of purchasers.

4.9.2 Access to Primary Care Health Services

Access was the dependent variable in this study. Access factors focused on the demand/patient factors, supply side/providers and how they interact to actualize through systems and processed to actualize health services delivery, Levesque et al., (2013). The responses are presented in Table 4.23.

Most of the respondents 59(51%) indicated that the patients under NHIF National Scheme did not have access to all NHIF outpatient services. There was an even number between those who agreed 47(41%) and those who disagreed 47(41%) as to whether NHIF primary care health services were available to the patients. Majority 75(65%) indicated that the prescribed medicines were not always available. They 62(53%) also indicated that the patients were asked to pay for services such as laboratory, x-ray, and medicines. The respondents 49(43%) however agreed that the patients waiting time was not long and that the patients were treated with courtesy 52(45%). An observation was

made that over 20% of the respondents were not sure of the access indicators assessed in this study. This indicates that the more than 20% are not knowledgeable on whether the citizens are accessing health services or not.

Table 4.23: CHMTs Perception on Access to NHIF Primary care Health Services

Access to Primary Care		Disagree	Not Sure	Agree
		n (%)	n (%)	n (%)
i.	NHIF outpatient services are always available	47(41)	21(18)	47(41)
ii.	NHIF prescribed medicine(s) are always available	75(65)	24(21)	16(13)
iii.	Most NHIF members have registered with facilities close to their home	34(30)	38(33)	43(37)
iv.	The cost/fare to the facilities is affordable to majority	52(45)	36(31)	27(23)
v.	Sometimes NHIF patients are asked to pay for registration, medicines, lab, or x-ray services	30(26)	23(20)	62(53)
vi.	The waiting time is often not long	41(36)	25(22)	49(43)
vii.	Patients are always treated with courtesy	15(13)	29(25)	43(37)
viii.	Our patients have access to ALL NHIF outpatient services	32(28)	25(22)	21(18)

Similar findings were found in a study by Abolghasem et al., (2018), who established that factors affecting strategic purchasing with an Iran purchaser were inaccessibility, unaffordability and unavailable services. Similarly Gathu et al., (2016) found out that long waiting time, lack of drugs and bad staff attitudes were some of the factors that saw enrollees opt out of a SHI, and the members were willing to come back if these areas were improved including the quality of care.

4.9.3 NHIF Communication to County Health Management Members

The County Health Management Team members were asked on their perception of NHIF communicating to them and the patients. The results are presented in Table 4.24.

Table 4.24: NHIF Communication to the County Health Management

	NHIF Communication	Disagree	Not Sure	Agree
		n (%)	n (%)	n (%)
i.	NHIF provides the County staff with all the information they require to make decisions on outpatient services	37(33)	30(26)	48(41)
ii.	NHIF always provide the citizens including me with adequate information on the benefit package	43(38)	17(15)	55(48)
iii.	NHIF regularly communicates to the County staff on any updates	43(37)	33(29)	39(34)

Though a number disagreed 37(33%) while others were not sure 30(26%) of this indicator, 48(41%) agreed that NHIF provides the County staff with all the information they require to make decisions on outpatient services. There was an agreement that NHIF provide the citizens with adequate information on the benefit package 55(48%). Respondents also agreed that NHIF regularly communicates to the County staff on any updates 39(34%), however a number 43(37%) disagreed on this indicator. It is also evident that more than 20% of the respondents were not sure of NHIF communication with the county management and the citizens.

4.9.4 Guidelines on Implementation of Primary Care Health Services

The CHMTs and SCHMTs were asked on whether there exist guidelines on implementation of the NHIF Primary Care Health Services. The respondents were also

asked if they knew of their mandates under the NHIF National Scheme. The responses are presented in table 4.25. Less than half of the respondents 47(41%) agreed that there exist guidelines on County Health Office and NHIF's outpatient mandates, however 39(35%) of respondents were not sure if the existing guidelines are easily understandable to employees working in the county health office. Less than half 49(42%) of respondents seem to agree that the existing guidelines clearly explains the role of hospitals under NHIF outpatient scheme and that employees in the County Health Office know what is required of them in supporting hospitals under NHIF outpatient 59(52%).

Table 4.25: Guidelines on Implementation of NHIF Primary Care Health Services

Guidelines on Implementation of Primary Care		Disagree	Not Sure	Agree
		n (%)	n (%)	n (%)
i.	There exist guidelines on County Health Office and NHIF's ***Outpatient*** mandates	30(27)	38(33)	47(41)
ii.	The guidelines existing are up-to-date	25(22)	46(40)	44(38)
iii.	The existing guideline clearly specifies the role of NHIF	26(23)	41(36)	48(41)
iv.	The existing guidelines are easily understandable to employees working in the county health office	39(33)	39(35)	37(32)
v.	The existing guidelines clearly explains the role of hospitals under NHIF outpatient scheme	12(10)	34(30)	36(31)
vi.	Employees in the County Health Office know what is required of them in supporting hospitals under NHIF outpatient	7(6)	27(23)	49(43)

Almost half of respondents 46(40%) were not sure as to whether the guidelines existing are up-to-date. It is clear that though majority agreed on the indicators mentioned above, almost in all instances the score was below 50% agreement, while else those not sure were above 20% for all indicators. This implies knowledge of guidelines is still

low. Knowledge of existence of and content of the purchaser guidelines may be inhibited by limited communication to a few County Health Management members. The explanation of limited information sharing may be explained by (Busse et al., 2007) who established that due to the rigidity and closed networks between government, purchasers and providers and professional associations, may inhibit enforcement of legal agreements as stipulated in the guidelines.

This can be supported by Munge, Mulupi, Barasa, and Chuma, (2017), who established that the Kenyan health sector is broadly guided by a long-term Kenya Health Policy (KHP) 2014-2030, the Kenya Health Sector Strategic Plan (KHSSP) and the Kenya Constitution, all which spell on aspects of equity, quality and efficiency in strategic purchasing. The NHIF Act of 1998 outlines the mandate and functions of the NHIF but does not clearly address strategic purchasing, specifically how the key stakeholders (citizens, providers and the national and county governments) should be engaged. Similar finds were found by (Mbau et al., 2018), who established that, the County health department decision on purchasing of health services is informed by the Kenyan Constitution, national health policies and the acts of parliament. CDOH's decisions on which services should be purchased, from whom and how were informed by the Constitution of Kenya, acts of parliament and national health policies. These services are outlined in the Kenya Essential Package for Health which is in line with the Kenya Health Policy 2014/2030 and the 2013/2017, also the Kenya Health Sector Strategic and Investment Plan. These policies are embedded in the bigger policy of Kenya Vision 2030.

4.9.5 County health facility infrastructure and Implementation of NHIF National Scheme

The CHMTs and SCHMTs were asked whether the county has adequate health facilities to enable delivery of primary care health services. The results are presented in table 4.26. Half 58(50%) seem to agree that the county has adequate infrastructure to deliver NHIF outpatient services, though majority 69(60%) agreed that not all public primary care facilities (dispensaries/health centres) are contracted with NHIF. Almost half 53(48%) agreed that NHIF contracted public facilities attract extra funds through capitation and that the NHIF capitation funds have been earmarked for particular programs 48(42%) though a number 44(38%) were not sure. There is an agreement 79 (69%) that the NHIF contracted public facilities have an advantage over those not contracted, however the score was below average on the county having recently taken measures to improve the infrastructure for NHIF outpatient services provision, 50(44%).

According to Resilient and Responsive Health Systems, (2014), governments are supposed to build infrastructure where gaps exist, results indicate the counties have not recently taken measures to improve the infrastructure for NHIF outpatient services provision.

Table 4.26: County health facility infrastructure for delivery of NHIF Primary Care Health Services

Infrastructure	Disagree	Not Sure	Agree
	n (%)	n (%)	n (%)

i.	The County has enough facilities to provide outpatient services under NHIF	37(32)	20(17)	58(50)
ii.	All public primary care facilities *(dispensaries/health centres)* are contracted with NHIF	69(60)	27(23)	19(16)
iii.	The mandate of NHIF contracted health facilities is different from the non-contracted facilities	27(23)	44(38)	44(39)
iv.	NHIF contracted public facilities attract extra funds through capitation	16(14)	46(40)	53(46)
v.	The NHIF capitation funds are material/significant in the county budget	28(25)	46(40)	41(36)
vi.	The NHIF contracted public facilities have an advantage over those not contracted	16(14)	20(17)	79(69)
vii.	The NHIF capitation funds have been earmarked for particular programs	23(20)	44(38)	48(42)
viii.	The county has recently taken measures to improve the infrastructure for NHIF outpatient services provision	30(27)	35(30)	50(44)

4.9.6 Financial Resources for Delivery of NHIF Primary Care Health Services

The County and sub county Health Management team members were also asked on their perception of the adequacy of financial resources/capitation funds mobilized through NHIF National Scheme. The results are presented in table 4.27.

Table 4.27: Financial Resources Mobilized for NHIF Primary Care Health Services

Financial Resources		**Disagree**	**Not Sure**	**Agree**
		n (%)	**n (%)**	**n (%)**
i.	NHIF contracted public facilities receive money direct to their bank account	13(11)	32(28)	70(60)

ii.	The county receives money on behalf of some NHIF contracted public facilities	40(34)	58(50)	17(15)
iii.	The capitation amount paid by NHIF per person is adequate	69(60)	24(21)	22(19)
iv.	Sometimes NHIF patients seeking outpatient services lack drugs and supplies	33(29)	14(12)	68(59)
v.	The County Health Office refunds NHIF patients who pay for drugs/supplies not available in public facilities	64(55)	36(31)	15(13)

The management teams 70(60%) agreed that the contracted health facilities under NHIF National scheme were receiving the capitation funds direct to their bank accounts, however they 70(60%) disagree to the capitation funds being adequate. They also indicated that the patients lack drugs and supplies 68(59%) and majority 63(55%) indicated that the patients are not refunded for supplies that are not available in the facilities except a few who indicated that the refunds are done 15 (13%). Adequate financial resources was seen to have a positive and significant influence on implementation of the NHIF National Scheme. Munge et al., (2017) established that NHIF has inadequate resources mobilized to support service delivery requirements, this has been occasioned by the low premiums which are not revised regularly.

4.9.7 Perceived NHIF Accountability by County Health Management

The CHMT and SCHMT members were asked on their perception on citizen representation in NHIF board, mechanisms NHIF has to report on use of funds and complaint mechanisms that NHIF has put in place for people to raise their complaints. The results are presented in Table 4.28.

Table 4.28: CHMTs/SCHMTs Perception on NHIF Accountability

	NHIF Accountability	Disagree n (%)	Not Sure n (%)	Agree n (%)
i.	There is a formal citizen representation in NHIF Board	36(31)	58(50)	21(18)
ii.	The county health employees are aware of NHIF responsibilities with regard to outpatient service	30(26)	27(23)	58(50)
iii.	The county health employees are aware of the NHIF outpatient benefit package	26(22)	24(21)	65(56)
iv.	Employees in the County Health Office are aware of any public reporting mechanisms on use of funds by NHIF	27(23)	45(39)	43(37)
v.	Employees in the County Health Office understand the patients' rights with regard to NHIF membership	32(28)	26(23)	57(50)
vi.	County Health employees understand their responsibility in providing NHIF outpatient services	27(23)	27(23)	61(53)
vii.	County health employees are aware of Patient complaint mechanisms	36(31)	45(39)	34(29)
viii.	County health employees are aware of the mechanisms NHIF has provided ***for them*** to forward complaint(s)	33(28)	49(43)	33(29)
ix.	NHIF addresses the complaints to improve service provision	48(41)	39(34)	28(24)

Half of the respondents 58(50%) of the respondents were not sure of how the citizens were represented in NHIF board. 45(39%) were not sure of any public reporting mechanisms on use of funds by NHIF, 45(39%) and 49(43%) were not aware of any complaint mechanisms NHIF has for the patients and the county employees to forward their complaints to NHIF, respectively. 48(41%) disagreed to NHIF responding to public complaints in order to improve on service provision. However 63(51%) agreed that they knew their responsibility in supporting implementation of NHIF primary care health services, and they 57(49%) understood the patients' rights as well as NHIF outpatient benefit package 65(56%) .

Results on NHIF accountability showed that most respondents did not know whether there is a formal citizen representation in NHIF Board, neither were they aware of the NHIF National Scheme benefit package and patients' rights with regard to the benefit package, similar findings were identified by Busse et al., (2007), who established that there is a challenge in determining the best group to represent citizens in purchasers boards. Majority of the respondents were not aware of any public reporting mechanisms on use of funds by NHIF, Abolghasem et al., (2018), who found that lack of sufficient transparency in financial resources is a major challenge in strategic purchasing. Honda in (2014), established that one accountability instrument is for purchaser to report use of funds to the public. Majority disagree to the statement that NHIF has complaint mechanisms and often addresses the complaints to improve service provision for their beneficiaries.

According to Munge et al., (2017) NHIF is accountable to citizens and government through a number of institutions including the Ministry of Health, but not directly to the County governments or citizens. Accountability is more concerned with financial performance than with other aspects of purchasing activities such as response of NHIF to complaints. Results of a study in China indicate that though accountability instruments, for example reporting and complaints systems were well established, most are non-functional. The authors also established that in the Philippines, systems to allow members to voice their preferences, needs and complaints were not well established (Honda et al., 2016).

4.9.8 County Health Management Binary Responses

The five point Likert scale responses were further simplified into binary variables. This was guided by the dependent variable which was access, it was assumed that patients can have access or no access to primary care health services. The independent variables (NHIF communication to the CHMTs and SCHMTs, NHIF National Scheme Guidelines, County health facility infrastructure, adequate capitation funds and NHIF accountability) were also recoded, results are presented in Figure 4.3.

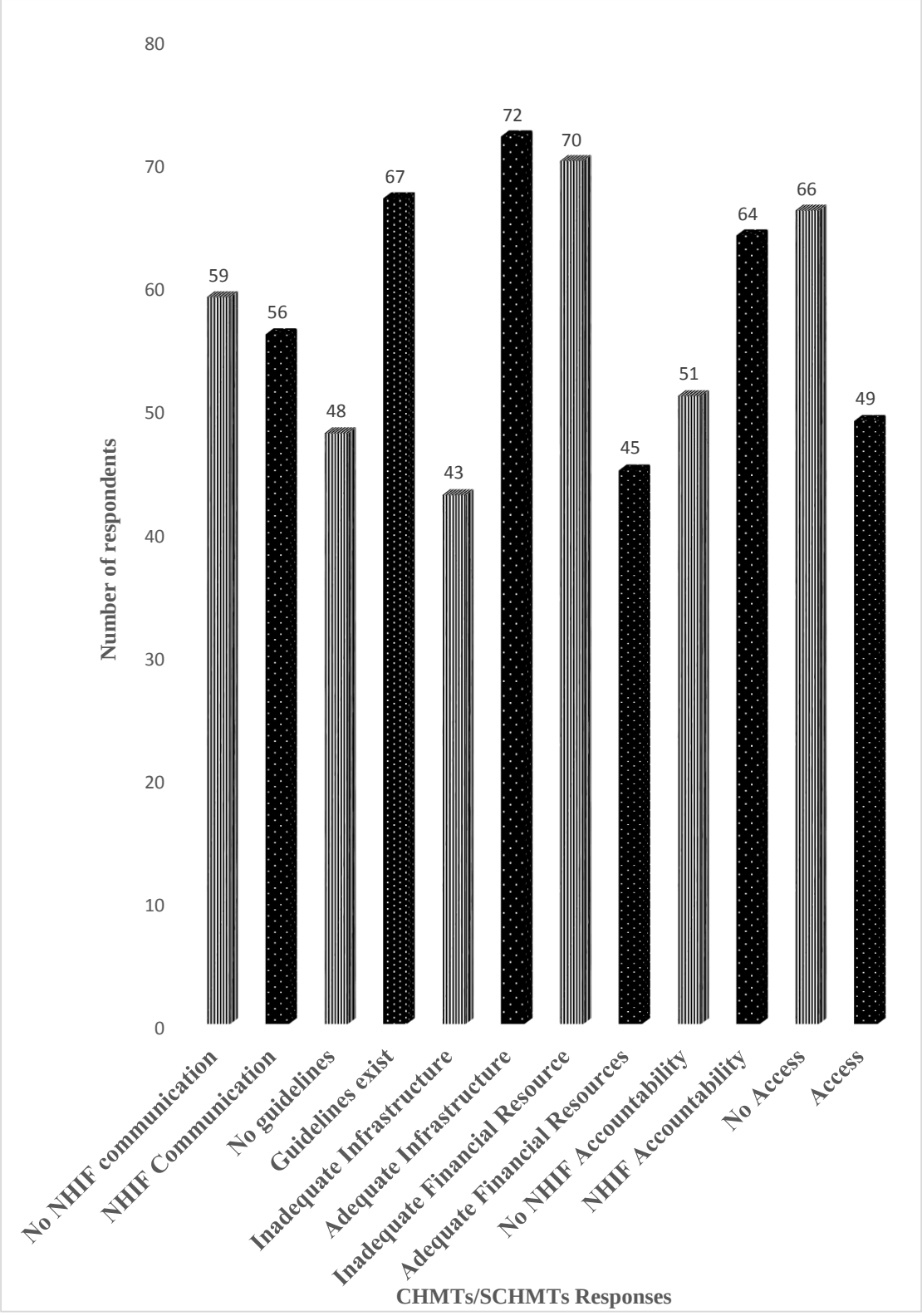

Figure 4. 3: Role of County Health Department in NHIF purchasing

Access to primary care health services was perceived by 66(57%) of the respondents (CHMTs/SCHMTs). The results of the CHMTs and SCHMTs are in agreement with the patients results on indicators such as drugs are not always available, and that the patients are asked to pay for primary care health services. This may hinder access to health care due to services not being available and not being affordable. The study results indicated that the NHIF outpatient services are not always available and affordable this was supported by the fact that the NHIF outpatient prescribed medicine(s) are not always available, in addition, NHIF patients are asked to pay for registration, medicines, lab, or x-ray services, yet under capitation all services should be provided to the patients without the patient paying because the purchaser (NHIF) has already paid in advance.

On physical accessibility, the results indicate that some NHIF members have not registered with facilities close to their homes. This could be explained by the fact that some public primary health facilities are not accredited to provide NHIF outpatient services. The results also indicate that when patients seek outpatient services, the waiting time is often long. According to Kironji, Tenambergen, and Mwangi, (2019), patients cited long waiting time at NHIF accredited outpatient facilities.

On NHIF communication to the County Health Management 59(51%) of the respondents indicated that the County staff and the citizens are not provided with adequate information and any updates by NHIF the purchaser to make decisions on NHIF Outpatient services. Communication was only done to a few members of the County Health Management and mostly to representatives in charge of NHIF in the Counties. The representatives often lack all the necessary information and they also fail

to disseminate to the other members of the County management. Busse et al., (2007), who established that where governing units exist, they often have inadequate staff and have lack information about the conduct of purchasers and provider.

On there being guidelines that direct the county health management on implementation of NHIF National Scheme, 67(58%) agreed that these guidelines exist. However there are 42% who believe the guidelines are non-existence, this can be implied that, what probably guides the implementation of primary care health services is the Ministry of Health guidelines, and not NHIF guidelines. Knowledge of existence of and content of the purchaser guidelines may be inhibited by limited communication to a few County Health management members. Busse et al., (2007) established that existing closed social networks between government officials, purchasers and providers may prevent implementation of legal agreements as stipulated in the guidelines. Despite the average agreement on knowledge of guidelines, most of the respondents knew their roles and the hospitals roles in delivering the primary care health services under the social insurance. This can be implied that, what guides the implementation of social insurer's primary care health services is the Ministry of Health guidelines, and not NHIF guidelines.

Results on county health facility infrastructure indicate that there was a general agreement of 73(63%), indicating that the Counties have adequate health facility infrastructure to support delivery of NHIF outpatient services, however 42(37%) felt the counties did not have adequate infrastructure. Not all public primary care facilities (dispensaries/health centres) are contracted by NHIF to provide these services. Similar findings were reported by (Munge et al., 2017), who established that NHIF's rigorous accreditation disadvantaged some facilities especially those in marginalized regions

thus creating geographical barriers. From the results of a in Kenya on purchasing arrangements of the county departments of health, by (Mbau et al., 2018), it was clear that health facility infrastructure gaps exist in most counties in Kenya, a situation that was blamed on budgetary constraints and inadequate prioritization in the budgetary process. An example was given where ambulances are bought, yet the counties still suffer from health workers shortage, more than eight digital X‑ray machines were issued by the President, yet there only two people to operate them, hence the number of patients waiting for services is overwhelming.

Results on adequacy of capitation funds mobilized in the county this study indicate that majority 70(61%) of the County Health Management members said that the financial resources mobilized through capitation were not adequate to offer primary care health services for the patients under NHIF National Scheme. According to Abolghasem et al., (2018), inadequate financial resources in relation to capacity and variations is a challenge in implementation of strategic purchasing. This is in agreement with results of this study where responses on adequacy of financial resources showed that the capitation amount paid by NHIF to the providers is not adequate, and this may explain the reason why most respondents agreed that sometimes NHIF patients seeking outpatient services lack drugs and supplies.

The results on NHIF accountability indicate that most 64(56%) perceived NHIF to be accountable to the public. However (51)44% indicate that NHIF was not accountable. Lack of accountability may hinder citizens' access to primary care health services. The Kenyan health care system is devolved and the counties are in charge of overseeing the implementation of primary care health services. The county government is therefore

responsible of ensuring that purchasers of the primary care health services are accountable to the County and the users of these services. From the results there is an indication that NHIF accountability is not fully functional as even the County Health Management teams are not aware of how the citizens are represented in NHIF boards, or whether the purchaser (NHIF) has public reporting mechanisms on use of funds.

4.10 County Inferential Statistics

4.10.1 Chi square Measure of Association

Cross tabulations were done to establish whether there was a relationship between each independent variable and the dependent variable. The Chi-Square statistic was used to evaluate tests of independence of the categorical variables. The chi square was used to assess whether an association exists between the dependent and the independent variables. The data recoded from Likert scale to binary variables was used to test the independence of the variables. The results are presented in Table 4.29.

Table 4.29: County Health Department role and Access to Primary Care Health Services

Variable	Sample Size	χ^2	Df	P-value
NHIF Communication	115	5.36	1	**0.021**
NHIF Primary Care Guidelines	115	10.45	1	**0.001**
County health facility infrastructure	115	13.20	1	**0.000**
Capitation Funds Adequacy	115	6.96	1	**0.008**
NHIF Accountability	115	10.98	1	**0.001**

Analysis of the County Management data was done using Chi square measure of association to establish if there was a relationship between the categorical independent variables and the dependent variables. The Chi square results indicate that NHIF

Communication χ^2 (1, N = 115) = 5.364, $p < 0.05$, Existence of Primary Care guidelines χ^2 (1, N = 115) = 10.447, $p < 0.05$, County health facility infrastructure χ^2 (1, N = 115) = 13.199, p < 0.001, Adequate capitation funds χ^2 (1, N = 115) = 6.956, $p < 0.05$ and NHIF Accountability χ^2 (1, N = 115) = 10.982, $p < 0.05$, all had a significant association with patients access to NHIF Primary Care Health Services. The results were significant at $p<0.05$. The *p-value* indicates that these variables were not independent of each other and that there was a statistically significant relationship between the independent variables and the dependent variable.

The results indicate that each of the study variable contributed significantly to purchasing of primary care health services. Health systems leadership, management and governance function is necessary in facilitate strategic purchasing. It may be viewed as exercising power, determining relations, roles and responsibilities of the different stakeholders, in this case the purchasers, health care providers, society and the beneficiaries/citizen (Mathauer et al., 2017) and (World Health Organization, 2016).

4.10.1 Bivariate Analysis of County Variables

Before carrying out the bivariate analysis it was necessary to test whether the assumptions for logistic regression were satisfied. Assumptions of logistics regression were adapted from Stoltzfus, (2011), these are first, logistics regression does not require a linear relationship between the dependent and independent variables. Secondly, the error terms does not have to be normally distributed. Thirdly, homoscedasticity is not required, and finally, the dependent variable should not be measured on an interval or ratio scale, but should be a binary variable. The data in this study met these

requirements. Holding other factors constant, a bivariate analysis was carried out to determine the effect of each independent variable on the dependent variable, assuming there was no interaction between the independent variables. The results are presented in Table 4.30.

Table 4.30: Bivariate Analysis of County Engagement with NHIF

Variable	B	S.E	Odds Ratio	*P-value*	R^2
NHIF Communication to CHMTS/SCHMTs					
No NHIF communication (ref)			1.000		
NHIF communicates	.888	.387	2.429	**0.022**	0.062
Existence of NHIF Primary Care Guidelines					
Guidelines don't exist (ref)			1.000		
Guidelines exist	1.308	. 414	3.700	**0.002**	0.120
County health facility infrastructure					
Infrastructure not Available (ref)			1.000		
Infrastructure Available	1.552	.444	4.722	**0.001**	0.153
Capitation Funds Adequacy					
Capitation Funds not Adequate(ref)			1.000		
Capitation Funds Adequate	1.028	.395	2.796	**0.009**	0.079
NHIF Accountability					
NHIF is not Accountable (ref)			1.000		
NHIF is Accountable	1.324	.408	3.758	**0.001**	0.126
Significance P<0.05			Sample size= 115		

Table 4.30 show that county engagement factors had a significant relationship with perceived access to primary care health services. The study found that NHIF Communication with county management (*p=0.022*), NHIF Primary Care health services (*p=0.002*), County health facility infrastructure (*p=0.001*) and Capitation Funds Adequacy (*p=0.009*) and NHIF accountability (*P=0.001*), all had a *p-value* less than 0.05 level of significance and therefore there was a significant association with access to primary care.

These results further show that that each independent variable had a significant association with the dependent variable. These results are in agreement with Figueras et al., (2005) who states that governance functions to promote strategic purchasing by having in place structures for purchasers and health care providers, putting up infrastructure where gaps exist, ensuring there adequate resources and ensuring accountability and transparency of purchasers. Further Honda et al., (2016), maintains that in strategic purchasing, government representative and regulatory bodies are expected to provide direction and leadership to enable purchasers undertake their roles and responsibility in strategic purchasing and to ensure society needs, preferences and priorities are addressed in purchasing decisions. This is however inhibited by the role the local government should play in strategic purchasing, as is illustrated by the multivariate results in Table 4.31.

The model summary of the bivariate analysis which can be explained by the R^2 shows the contribution of each independent variable towards access to primary care health services holding all other factors constant. It is evident that Health Facility Infrastructure was the leading contributor towards perceived access to NHIF primary care health services in the two counties under study, with an R^2 of 0.153 which implies that it accounts for about 15.3% of all the variations in access to NHIF primary care health services. This was followed by NHIF accountability which had an R^2 of 0.126 which implies that NHIF Accountability accounts for about 12.6 % of all the variations in access to NHIF primary care health services. NHIF Primary Care Guidelines had an R^2 of 0.120 implying that availability of NHIF Primary Care Guidelines accounted for about 12% of all the variations in access to NHIF primary care health services, this was followed by Adequate Capitation Funds which accounted for about 7.9% of all the

variations in access to NHIF primary care health services and lastly communication by NHIF to the county health management scored the least, by explaining 6.2 % of variations in provision of NHIF primary care health services.

4.10.2 Multivariate Analysis

The multiple regressions results are shown in Table 4.31.

Table 4:31: Effect of County Government's Role on Access to Primary Care Health Services

Variable	B	S.E	Odds Ratio	*P-value*
NHIF Communication to CHMTS/SCHMTs				
No NHIF communication (ref)			1.000	
NHIF communicates	-.270	.566	.763	0.633
Existence of NHIF Primary Care Guidelines				
Guidelines don't exist (ref)			1.000	
Guidelines exist	.805	.532	2.237	0.131
County health facility infrastructure				
Infrastructure not Available (ref)			1.000	
Infrastructure Available	.920	.514	2.508	0.074
Capitation Funds Adequacy				
Capitation Funds not Adequate(ref)			1.000	
Capitation Funds Adequate	.723	.454	2.060	0.112
NHIF Accountability				
NHIF is not Accountable (ref)			1.000	
NHIF is Accountable	.633	.535	1.883	0.237
Significance P<0.05	Sample size= 115		R^2=0.24	

A multivariate analysis was done on the five factors (communication, knowledge of guidelines, infrastructure, adequate financial resources and NHIF accountability) to test their combined influence on implementation of the National Scheme. Logistic regression was performed to establish the effects of the independent variables on the likelihood that they will guarantee patient access to NHIF outpatient services. Hosmer

and Lemeshow Goodness-of-fit test (GOF) was used to decide whether the study model was correctly specified. The results indicate that the logistic regression model was statistically significant, χ^2 (6) = 2.924, $p > 0.05$. The Goodness-of-fit test produced a *p-value* above 0.05, therefore the model was significant. The model explained 24% (Nagelkerke R^2) of the variation in access to Primary care health and correctly classified 72% of those who perceived there to be access, refer to Appendix 14.

The results indicate that in a combined relationship, none of the variables in the study was statistically significant. The value of the constant (Odds ratio of .145, $p < 0.05$) indicates that implementation of the National Scheme will always exist at a certain minimum even without the five factors (Communication, guidelines, infrastructure, financial resources and NHIF accountability) under investigation in this study. This can be explained by the fact that County health involvement in NHIF decision was not felt by most respondents, as most said the funds generated by the scheme were not adequate, NHIF was not communicating to them and updating them as much as they would want. Information and communication strategies are key in implementation of policies and decisions. The county health in delivery of primary care services under the National Scheme is guided by other policy documents and not directly by NHIF.

The results of this study indicate that the County health departments feel that they are not fully engaged in the implementation of the Social Insurer's Primary Care Health Services. The County Management who were the respondents scored very low in determining what services, how the services and from whom the NHIF National Scheme services are purchased from. The role the County Health Management should plays in the implementation of the National scheme was not clear. Busse et al., (2007),

established that governments face multiple barriers including political, cultural, economic, and technical that affect their ability to undertake purchasing stewardship. Moreover there are costs involved in monitoring purchasers' activities. Mathauer et al., (2017) established that governance function with respect to purchasing is often absent or under-developed. When the governance is weak, policy is often driven by what is good for the insured rather than what is good for the society. Results of an Indonesian case study identified that unclear organizational roles and accountability lines between the National purchaser and the Ministry of Health and local/district health offices act to undermine the function of the purchaser (Honda et al., 2016).

4.11 Moderating Effect of Communication on NHIF Purchasing Mechanism

To determine whether communication plays any moderating effect on NHIF purchasing mechanism, deviate scores were computed for citizen, providers and county health management models with and without communication. Deviate score also called -2 log likelihood compares models with regard to how best each fit the data. Models with less deviate score was deemed better than the one with large deviate score. The results are presented in Table 4.32.

Table 4.32: NHIF Communication in the Purchasing arrangement

Variables	Model with communication (-2 log likelihood)	Model without Communication (-2 log likelihood)
Citizens' engagement	400.989	411.539
Health care Providers' responsibility	23.975	24.515
County Government's Role	134.509	134.739

The results indicate that the deviate score for all the respondents was higher where communication was not in the model, and lower where communication was incorporated in the model, this indicates that communication is significant in determining access to primary care health services. However, the difference between the deviate scores of the patients is larger than that of the providers and the county health management. This implies that communication to the citizens' was important in determining access to primary care health services under NHIF National Scheme.

4.11.1 Moderating Effect of NHIF Communication on Citizen Engagement

The results indicate that the deviate score (-2 log likelihood) for was higher 411.539 where communication was not in the model, and lower 400.989, where communication was incorporated in the model, this indicates that communication was significant in determining access to primary care health services. The citizens deviate score can be supported by the bivariate analysis scores which indicated that NHIF communication to citizens was significantly related to access to primary care health services at $p<0.001$, communication also explained about 12% of variations in access.

Patients who felt communication was adequate were 3.8 more likely to access NHIF outpatient services, than those who did not. Communication to the patients mattered

because it is through communication that patients gain information on how to enroll as NHIF members, how to enroll their dependents, how much contributions/premiums to make on a monthly basis, citizens service entitlement, feedback mechanisms available, how to select providers and eventually uptake services. Communication by NHIF to the citizens is through pamphlets, television, short messages through a member's mobile phone, radio and print media, most of this communication is done in English language. Though these mechanisms were in place to communicate to the citizens, at the time of this dissertation NHIF did not have any communication strategy available to explain the communication mechanisms and structures.

According to Munge et al., (2017), NHIF communication to the public is through published detailed information on the NHIF website and advertisements widely in the media, however NHIF's use of its website, newspapers and media announcements to inform the public of its service limits the spread of its messages to those who have access to these media, this is agreement with findings of this study that established that more than half 226(57%) of the patients said that communication from NHIF was adequate, while 169(43%) felt the communication was not adequate. Inadequate communication may hinder access to information which may consequently hinder access, this is because a patient without information has no power to claim their entitlements. Asymmetry of information between the provider and the patient often lead to under provision or over provision of health services. Empowering the principal (citizens) and the agent (health care provider) with information through effective communication strategies is important in ensuring that services provided promote equity and efficiency (Carrin & Chris, 2004).

For NHIF to increase coverage of communication and information to the public there is need to have a communication strategy in place and its implementation monitored effectively. Lessons can be learnt from South Africa which is moving towards UHC by implementing National Health Insurance. One of the key to implementation of NHI is a communication strategy which was used as a means to demystify anxieties and fears about NHI implementation and to create awareness among all the relevant stakeholders. Some of the initial communication strategies used by NHI to disseminate information was use of billboards, radio, and pamphlets for mass distribution. The radio and leaflets were in English and several local languages, following further consultation with stakeholders, information would also be disseminated through television, print media, social media and posters (World Health Organization, 2017).

4.11.2 Moderating Effect of NHIF Communication on Provider Responsibility

There was a difference in the provider deviate scores. The model with communication had a deviate score (-2 log likelihood) of 23.975 and without communication (-2 log likelihood) of 24.515. This implies that communication was significant in determining provision of NHIF primary care health services. Majority of the providers 50(76%) said that communication from NHIF was adequate while 16(24%) said it was not adequate. Providers who felt NHIF communication was adequate were 3.6 times more likely to provide primary care health services than those who felt it was not adequate.

NHIF communication to provider explained about 6.8% of variations in providing access to primary care health services, the low score may be explained by the fact that health care providers offer services based on a contract, which outlines all the roles and responsibilities of NHIF and the provider, therefore it is likely that the facilities would

not expect frequent communications as most of the details are already outlined in the contract. Tangcharoensathien et al., (2015) states that after a purchaser has selected providers to offer services, the purchaser must establish an agreement with accredited providers in the form of a formal contract, which serves as a means of making providers aware of the expectations of the purchaser, this includes the range of services to be offered; quality expectations; provider payment methods, regularity of payments and level of payment; any information on returns that providers are required to submit as evidence for performance; and details on action to be taken for performance below expectations.

4.11.3 Moderating Effect of NHIF Communication on County Government's Role

There was a difference in the deviate score of NHIF Communication to the Government. The model with communication had a deviate score of (-2 log likelihood) 134.509 and model without communication had a deviate score of (-2 log likelihood) of 134.739. About a half 59(51%) of the County Health Management members felt that communication by NHIF to themselves was inadequate while 56(49%) said it was adequate. There was a significant association between communication and perceived access to NHIF primary care health services at $p<0.05$. County health management members who felt that there was NHIF communication were 2.4 times more likely to oversee the implementation of NHIF primary care services.

The Kenyan health care system is devolved and the counties are in charge of overseeing the implementation of primary care health services in the county and therefore communication from NHIF would play a key role in ensuring that the county health

management know their roles and responsibility in providing oversight in provision of these services. The Joint Learning Network for UHC et al., (2018) established that effective strategic communication is essential to realization of UHC. Progress toward UHC requires local ownership and tailored strategies for particular settings. Different stakeholders must be involved. These includes politicians, health care purchasers, health care providers, patients/citizens, suppliers, and civil society groups. Each audience requires tailored communication approaches to change their knowledge, attitudes, and behaviors. The authors' further state that strategic communication is careful, coordinated actions intended to inform and influence key stakeholders.

These actions may engage stakeholders in information sharing, conversation, and/or shared learning, with the aim of making decisions or influencing behavior changes. Strategic communication for UHC enables all stakeholders to understand their rights, responsibilities, and opportunities to maximize the benefits of UHC and to act in the best interest of realizing those rights, responsibilities, and opportunities. This is often a first step for many in the struggle to realizing UHC. Although decision makers, policymakers and implementers recognize the importance of strategic communication for UHC, execution and implementation of strategic communication does not exist in most health systems, a similarity of these findings was established in this study as some respondents indicated that they did not receive communication from NHIF.

World Health Organization, (2014) recognizes that communication can be used to enhance public accountability and participation with respect to policy decisions and policy implementation. This necessitates provision of clear information to the public on policies that have been approved. In purchasing these policies relate to consumer

rights and entitlements, health services, and expenditure budgets. Genuine public debate can only take place if people know what policies have been approved. Clear and concise communication is important if purchasers are going to undertake effective monitoring and evaluation. Information is critical if citizens are going to fully utilize primary care services, and be able to claim for their entitlements, especially the poor who often lack information regarding these policies.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter represents summary of findings guided by specific objectives in chapter one. Conclusions and recommendations are also presented to inform future decisions and research direction.

5.2 Summary of Findings

The purpose of this study was to assess the effects of National Hospital Insurance Fund's purchasing mechanism on access to primary care health services for the National scheme members, in Kenya, with a focus on two counties. Results of this study formed a basis for development of a theoretical model of strategic purchasing of primary care health services health under the NHIF National Scheme. This was informed by the existing gaps in the theoretical framework that informed this study (principal agency framework). The framework lacks a health systems thinking perspective.

This study was a cross sectional research, which employed various data analysis designs. Descriptive design was adopted so as to generate summary statistics, correlational design was used to generate the correlation matrix, and quantitative design was used for predictive and inferential statistics while else qualitative design was used for thematic analysis.

The first objective was to determine the effect of citizens' engagement on access to primary care services under NHIF. In order to accomplish this objective, citizens represented by patients drawn from the various sampled health facilities were asked to respond to questions which addressed the following specific areas under NHIF National Scheme ; citizens' knowledge of the benefit package, NHIF's communication to the citizens, whether citizens views and values are taken into account by NHIF in its decision making, NHIF's Accountability to the citizens, Choice of health provider and finally the patients also responded to questions on access to NHIF outpatient services. Majority of the patients 366(93%) indicated that they knew the NHIF health benefit package, majority of the respondents 226(57%) indicated that NHIF provides them with information they require to make informed decisions, 280(71%) were of the view that NHIF does not take into account their view and values, 272(69%) of the respondents are of the opinion that NHIF is not accountable to them, 269(68%) of the respondents agreed to know how to select an outpatient facility.

Access to primary care should be guaranteed for every member of NHIF. However this study indicate that 111(28%) of the respondents did not perceive the services to be available. This may be attributed to unavailable drugs and being charged for services. Chi square measure of association to establish if there was a relationship between the categorical independent variables and the dependent variables was done. The Chi square results indicate that NHIF Communication χ^2 (1, N = 395) = 33.307, $p < 0.001$, Citizens' views and values χ^2 (1, N = 395) = 22.654, $p < 0.001$, NHIF Accountability χ^2 (1, N = 395) = 24.712, $p < 0.001$, Choice of provider χ^2 (1, N = 395) = 40.787, $p < 0.001$, all had a significant association with patients access to NHIF Primary Care Health Services. A further bivariate analysis using binary logistic regression indicated

that NHIF Communication with Citizens (*p <0.001*), Citizen Views and values (*p <0.001*), NHIF Accountability to Citizens (*p <0.001*) and Citizens Choice of Primary Care Provider (*p<0.001*), all had a *p-value* less than 0.05 level of significance and therefore there was a significant association with access to primary care. A multivariate binary logistic regression was performed, Hosmer and Lemeshow Goodness-of-fit test (GOF) was used to decide whether the study model was correctly specified. The results indicate that the logistic regression model was statistically significant, $\chi 2$ (6) = 5.412, *p* >0.05. The model explained 23% (Nagelkerke R2) of the variance in access to Primary care health services and correctly classified 74% of patients who perceived to have access to NHIF outpatient services. Communication (*p =0.001*), Accountability (*p = 0.045*) and provider choice (*p =0.001*) contributed significantly to the study model/prediction, however benefits (*p = 0.987*) and citizens views and values (*p = 0.319*) did not contribute significantly to the model.

A 2-fold increase in the odds of accessing primary care services among those who received communication than those who did not, was observed in this study. A 2 –fold increase in the odds of accessing primary care services for patients who perceived NHIF to be accountable than those who did not, was observed in this study. Citizens' choice of provider was significantly associated with access to NHIF primary care. A 3-fold increase in the odds of accessing primary care health services among patients who understood the rules of selecting a facility, than those who did not, was observed under this study.

The second objective was to assess the effect of health providers' responsibilities on access to primary care health services under NHIF national scheme. The following

specific areas were assessed, NHIF Communication to Primary Care Provider, Provider Perception on NHIF Accreditation, Primary Provider Services Contract with NHIF, Primary Provider Payment by NHIF, Monitoring of Primary Provider Performance and the effects each had on Patients' Access to NHIF Primary Care health services. The results of this study showed a generally high level of agreement with all the study variables. Patients' access to primary care providers scored the highest (60)91%, followed by availability of service contract 58(88%) and the accreditation process 56(85%). However the areas that scored the least were provider payments 45(68%), communication from NHIF 50(76%) and monitoring of the primary provider by NHIF and the government 51(77%). There still providers who seem to differ, and they disagreed on the conditions above. These areas are important to think about as this may hinder patients' access to primary care. Provider engagement with NHIF had a significant relationship with perceived access to primary care health services. The study found that primary provider accreditation by NHIF ($p=0.26$) and monitoring provider performance ($p=0.005$), had a *p-value*< 0.05 level of significance and therefore there was a significant association with access to primary care.

Multivariate analysis results indicate that the logistic regression model was statistically significant, $\chi 2\ (4) = 3.606$, $p > 0.05$. The GOF produced a *p-value* above 0.05, which indicated that the model passed the test. The model explained 48% (Nagelkerke R^2) of the variance in access to Primary care health services, and correctly classified 92% of those who perceived there was access to primary care health services. The multivariate analysis results shows that monitoring provider performance by NHIF and the County government is significantly associated with access to NHIF primary care health services. The *p-value* generated was 0.024 which is less than 0.05 level of significance.

A 31-fold increase in the odds of providing primary care services among the facilities that were monitored against those who were not monitored, was observed in this study. From these results Communication (*p=0.479*), Accreditation (*p=0.223*), Service contract *(p=0.656)* and Provider payments *(p=0.063)* did not significantly influence access to primary care health services.

The third objective was to establish the effect of government's role on access to primary care services under NHIF. The following specific areas were addressed, NHIF Communication to the county management-health, Guidelines on Implementation of the national scheme, County health facility infrastructure, financial resources and NHIF Accountability. A sample of 120 CHMTs and SCHMTs was drawn, a response rate of 96 %(115) was achieved. Majority of the respondents 66(57%) perceived there to be no access for patients to primary care health services under NHIF. Majority of the respondents 59(51%) indicated that NHIF does not communicate with them for them to make informed decisions, NHIF does not communicate to the citizens and that that NHIF does not communicate to the CHMTs and SCHMTs on any updates. Majority 67(58%), seem to agree that there exist guidelines that direct the county health management on implementation of NHIF National Scheme.

Majority, 73(63%) indicated that the Counties have adequate infrastructure to support delivery of NHIF outpatient services, however 42(37%) felt the counties did not have adequate infrastructure. Majority 70(61%) of the CHMTs/SCHMTs indicated that the financial resources mobilized through capitation were not adequate to offer primary care health services for the patients under NHIF National Scheme. The results on NHIF accountability indicate that majority 64(56%) perceived NHIF to be accountable to the

public. A bivariate analysis shows that county engagement factors had a significant relationship with perceived access to primary care health services. The study found that NHIF Communication with county management (*p=0.022*), NHIF Primary Care health services (P=.002), County health facility infrastructure (*p=0.001*) and Capitation Funds Adequacy (*p=0.009*) and NHIF accountability (*p=0.001*), all had a p-*value*< 0.05 level of significance and therefore there was a significant association with access to primary care. A further analysis of the County Management data was done using Chi square measure of association to establish if there was a relationship between the categorical independent variables and the dependent variables. The Chi square results indicate that NHIF Communication χ^2 (1, N = 115) = 5.364, $p < 0.05$, Existence of Primary Care guidelines χ^2 (1, N = 115) = 10.447, $p < 0.05$, County health facility infrastructure χ^2 (1, N = 115) = 13.199, $p < 0.001$, Adequate capitation funds χ^2 (1, N = 115) = 6.956, $p < 0.05$ and NHIF Accountability χ^2 (1, N = 115) = 10.982, $p < 0.05$, all had a significant association with patients access to NHIF Primary Care Health Services.

A multivariate analysis of the County health management data was also performed to measure the influence of the independent variables on the dependent variable. Goodness-of-fit test (GOF) was used to decide whether the study model was correctly specified. The results indicate that the logistic regression model was statistically significant, $\chi 2$ (6) = 2.924, $p > 0.05$ and the model explained 24% (Nagelkerke R^2) of the variations in access to primary care health services, and correctly classified 72% of those who perceived there to be access to NHIF outpatient services. In a combined relationship none of the county health management independent variables under consideration in this study was statistically significant, except the constant.

The fourth objective was to establish the moderating effect of communication on purchasing of primary care health services health under the NHIF National Scheme. Under citizen engagement, the model without communication had a deviate score (-2 log likelihood) of 411.539 while the model with communication had a deviate score of 400.989. Under the provider responsibility the deviate score was 24.515 without communication and 23.975 with communication in the model. Under the County government's role, the model without communication had a deviate score of 134.739, while else the model with communication the deviate score was 134.509. The results indicate that the deviate score for all the respondents was higher where communication was not in the model, and lower where communication was incorporated in the model, this indicates that communication is significant in determining access to primary care health services. However, the difference between the deviate scores of the patients is larger than that of the providers and the county health management. This implies that communication to the citizens' matters more in determining access to primary care health services under NHIF National Scheme.

5.3 Conclusion

Universal Health coverage will be guaranteed if we have universal access to health care. If we are to guarantee universal access to NHIF primary care health services, services must be adequate, acceptable, affordable, physically accessible and available. Results of this study reveal that despite the citizens, prepaying for services, these services are not guaranteed from the selected primary health care providers.

On the first objective, citizen engagement has an effect on access to primary care health services. The citizens were asked to respond on five areas that were considered as prerequisites for strategic purchasing. These were citizen knowledge of benefit package, NHIF communication and information to citizens, NHIF determining citizens' views and values, NHIF accountability to citizens, choice of primary provider by citizens and access to NHIF primary care services. Results indicate that the citizens are not fully engaged by the social health insurer. Despite majority indicating that they knew the primary care benefits and entitlements, entitlement to treatment of uncomplicated STIs and minor surgery under local anaesthesia scored low. Information and communication from NHIF was inadequate, indeed information on NHIF services was cited to emanate from friends and relatives. Citizens views and values are not determined, neither are citizens engaged in determining their own needs .Citizens also felt that NHIF is not accountable to the public as respondents indicated that they don't know any public reporting mechanism on use of funds by NHIF, they also did not know how they are represented in NHIF boards, they were not fully aware of any complaint and feedback mechanisms except travelling to NHIF offices. Rules of selecting facilities were not known by all respondents as some indicated that they can choose more than one primary care provider. Services were not guaranteed thus limiting access,

this was occasioned by medicines not always being available and sometimes the patients were asked to pay for services. Patients indicated not having trust with the system as providers often mention that NHIF pays them too little capitation, and therefore the patient must pay for some basic services including those covered under NHIF National scheme. Instances of patients taking home prescriptions less than what is required for a particular condition was a common phenomenon. Patients don't know their rights as it was seen that they were satisfied with taking home a written prescription as what mattered to some was the presence of a consultant regardless of whether drugs were there or not. Though all the variables seemed to influence access in a binary relationship, in a combined relationship, communication with citizens, NHIF accountability to citizens and choice of provider were seen to influence access of patients to primary care health services.

On the second objective, provider responsibility in NHIF purchasing has an effect on access to primary care health services. Providers seemed to recognize their responsibilities in delivering NHIF primary care health services. The health care providers were asked to respond on five areas that the researcher felt were necessary to determine their role in NHIF strategic purchasing. These were, NHIF Communication to Primary Care Provider, Accreditation, Provider Services Contract with NHIF, Provider Payment by NHIF and Monitoring of Primary Provider Performance. Majority seem to agree that NHIF communicates with them, however gaps exist in communication as not all providers agreed to this indicator. They mentioned that you mostly get communication from NHIF when they want to bring on board a new product/benefit for the provider to offer to patients.

The accreditation and service contract were scored highly, however gaps exist because not all facility staff are engaged in the accreditation process, neither are they aware of the content of the contract. Some claimed it's voluminous for them to read and understand. This may explain the reason why they told the patients that some services are not covered under the scheme yet all these were outlined in the services contract. Provider payment was regular however, there was delay by NHIF to remit the capitation funds. Providers did not have a complete list of NHIF members enrolled in their facility and though they received the capitation funds, they were not sure if it was all they were entitled to. Monitoring of provider performance seem to be taking place, however monitoring was being done more by the county government than NHIF quality assurance, thus explaining the reason why patients indicated that they lacked drugs and were paying for services. Majority seem to agree that NHIF outpatient services are available to the patients, however a small number thought otherwise, as they indicated lack of drugs especially in public health facilities, while in private, patients were being asked to pay for registration, medicines and laboratory tests. This study concludes that monitoring provider performance by NHIF is key in ensuring patients access NHIF primary care services.

On the third objective, County role in NHIF purchasing has an effect on access to primary care health services. The county health management teams were not engaged by NHIF on primary care health decisions. The areas that the research focused on were NHIF Communication to CHMTs/SCHMTs, Guidelines on Implementation of Primary Care Health Services, County Health Infrastructure, Financial Resources, and NHIF Accountability to County Health Management and access to primary care health services. Results indicate that NHIF communication to the county is inadequate, the

health management is represented by a few individuals who fail to disseminate information to the other members of management.

Guidelines on NHIF national scheme implementation were lacking and actually what seem to guide the county management in their operations is the Health policies and the strategic plan, and not an explicit guide from NHIF. Infrastructure was adequate despite having a number of facilities not accredited by NHIF to offer outpatient services. Recent measures have not been undertaken to improve the existing infrastructure to enhance delivery of the primary health services on financial resources, there is an agreement that capitation funds are an additional source of revenue, however these are not adequate and it is also clear that the county management don't know the number of people in their jurisdiction who are registered with the national scheme. NHIF accountability was also inadequate in areas such as the county management doesn't know how citizens are presented in NHIF decision making, they were also not aware of complaint and feedback mechanisms available to raise complaints or give feedback to improve on services. In a combined relationship all these variables did not influence the respondents' perception of patient access to services. In fact only the constant was influencing, meaning that with or without the variables in this study, the respondents think patients will still access NHIF primary care services. This means the county management does not see its role in NHIF decision, and what guides delivery of services in the county is the policies by ministry of health and not NHIF regulatory framework.

On the fourth objectives, Communication has a moderating effect on citizen engagement, provider responsibility and county government role. Therefore communication has an effect on the purchasing mechanism of primary care health services. The results indicate that the deviate score for all the respondents was higher where communication was not in the model, and lower where communication was incorporated in the model, this indicates that communication is significant in determining access to primary care health services

5.4 Study Recommendations

Based on the objectives of the study, the following recommendations were made:

5.4.1 Citizens Engagement under NHIF Primary care health services

i. NHIF should leverage on the existing government administrative mechanisms to relay information to the citizenly for example use of chief barasas, as informal channels of communication since more people relate and understand them better including churches and other religious institutions.
ii. NHIF to visit health care providers, to meet with the patients and ask them on their experience with the health services.
iii. NHIF to visit the community to establish public needs and preference through public forums that must be organised and the public informed on the same.
iv. NHIF should establish means of eliciting citizens' feedback, complaint mechanisms and also act on these complaints when raised.
v. Public to be trained more on how to select a facility and to be informed on how the capitation system works.

5.4.2 Providers' responsibility under NHIF Primary care health services

i. NHIF quality assurance department to actively and regularly monitor the activities of health care providers, this will ensure providers deliver services equitably and effectively.

ii. NHIF to have regular meetings with providers so that they can listen to the challenges and good practices to enforce service delivery. In addition, enlighten them on the content of the contract during such meetings.

iii. NHIF to provide the health providers a full list of all the enrolees in their facilities, to enable the facilities to budget ahead and provide services effectively, despite the capitation funds dely.

iv. NHIF to make known to the providers the communication channels and feedback mechanisms available, to allow information exchange.

v. Providers to be ethical in provision of services, to guarantee services provision to patients without intimidating patients that the capitation funds are too low or that the patients can only spend a particular amount per visit, and also deliver services equitably without denying services based on the mode of payment by patients, with capitation patients being treated with discrimination unlike those paying out of pocket or through private insurance.

5.4.3 County Health Management role under NHIF Primary Care Health Services

i. The County is in charge of primary care and it should provide stewardship role for all health services regardless of the purchaser or provider, and therefore the engagement of NHIF and County health management should be seamless. The

county should ensure that the NHIF beneficiaries access quality primary care health services.

ii. County to upgrade all primary care providers and ensure they are accredited by NHIF to offer quality primary care health services. This will promote geographical access of health services.

iii. Communication to the County health management to be enhanced and information exchange to County health management on how capitation works in the county to be promoted.

5.4.4 Communication and Information Sharing

i. Communication and information sharing mechanisms be enhanced as this is the missing link with stakeholders (providers, county government and citizens). The communication must be tailored to suit the target audience, while taking into consideration social demographic, cultural variations, and language barriers.

ii. Accountability mechanisms for example complaint and feedback mechanisms be put in place and acted on.

iii. NHIF to establish means of engaging stakeholder at the grassroots beyond boardroom engagement.

iv. National guideline on strategic purchasing under national scheme should be disseminated to public to enhance understanding on how capitation mechanism works.

5.5 Recommended Strategic Purchasing Framework

This study adopted a theoretical framework by Figueras et al., (2005) who identified three sets of principal-agent relationships as outlined in Figure 2.1, on page 41-42, these

are: government and purchaser, purchaser and provider, and citizen and purchaser. Further the RESYST Consortium, (Resilient and Responsive Health Systems, 2014), re-emphasized the theoretical framework by Figueras see Figure 4.13 and further outlined the relationships into particular activities, (Appendix 14) which should be undertaken to achieve strategic purchasing. Strategic purchasing requires the purchaser to engage actively in three main relationships: with Government (Ministry of Health), with healthcare providers, and with citizens. This study therefore looked into this engagement by asking (the providers, the citizens and the County government) whether their engagement with the purchaser was in line with the framework of strategic purchasing.

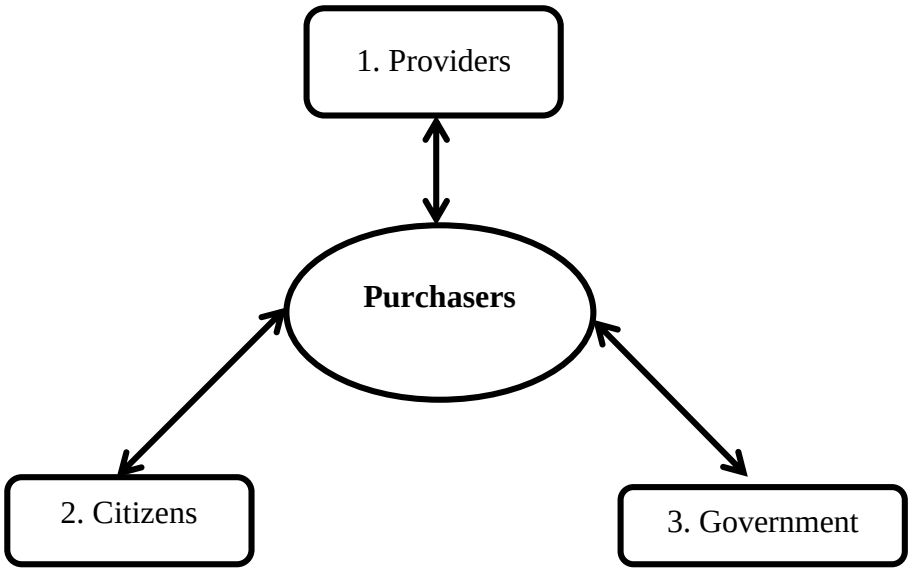

Figure 5.1; Principal Agency Framework of Purchasing

Source: (Resilient and Responsive Health Systems, 2014)**.**

The results of this study revealed that the principal-agency framework by Figueras et al., (2005) and Resilient and Responsive Health Systems, (2014) is borrowed from United Kingdom which has far better developed health systems, more advanced health information systems and is a developed nation. This framework is a good place to start

in addressing the purchasing challenges of a SHI in a developing country, however it is weak due to the fact that each of the three sets of relationships may not work in isolation in a developing country like Kenya. Kenya continues to experience challenges with providing oversight in the health sector, which has seen patients continually pay for services out of their pockets despite having prepaid for services under the SHI. If principal-agency model is working optimally, it is supposed to guarantee access to primary care health services under NHIF the Kenya's Social health insurer.

However this study established that the citizens continue to pay for services and lacked drugs. The health providers under capitation continually underprovide primary care health services and push the financial burden of care to the patients, while taking advantage of the patients' lack of knowledge on how the purchasing arrangement works. Though providers had a contract outlining their mandates, some did not know the content of the contract and said it was too bulky for them to read and understand. The County Health Management members said they were not involved by NHIF in implementation of the NHIF National scheme.

This study therefore established that the challenges that exist in this framework is the asymmetry of information which can be solved by introducing information sharing mechanisms and communication into the framework and tailor making the communication strategy to the target audience. The results indicate that patients prioritized the health provider characteristics including knowledge of how to choose a primary care health provider, communication from NHIF and their views and values being taken into account. Heath provider priority was monitoring and evaluation by NHIF and the County Government. For the county none of the variable was significant

in a combined model except the constant, however in a bivariate analysis health facility infrastructure and NHIF accountability were areas that affected access to primary care health services. These findings can be expressed in a mathematical expression as presented below;

Citizen Engagement ……Equation 1

This equation shows the probability of accessing primary care health services when citizens are engaged in strategic purchasing by NHIF.

$$Probability(Access) = \frac{1}{1 + e^{-(-0.415+0.858X_1+0.729X_2+1.095X_3)}}$$

Where X_1= NHIF communication

X_2= NHIF Accountability to Citizens

X_3= Citizens' Choice of Primary Care Provider

Provider responsibility ……Equation 2

This equation shows the probability of accessing primary care health services when the health care provider undertake their responsibility as outlined in the contractual arrangement with NHIF.

$$Probability(Access) = \frac{1}{1 + e^{-(-0.829+3.442X_1)}}$$

Where X_1= Monitoring provider performance

County Engagement ……Equation 3

This equation shows the probability of Access when the County plays it role on strategic purchasing. However the model under County Health Management was not significant,

but the role of the County cannot be overlooked because, under devolution, the County is charged with the responsibility to oversee provision of primary care health services.

$$Probability(Access) = \frac{1}{1 + e^{-(-1.934)}}$$

In summary, citizens valued communication (X_1), and it is worth noting that determining whether the purchaser (NHIF) is accountable to citizens (X_2) requires exchange of information, in addition, for citizens to choose the right providers (X_3), it requires information on the accredited facilities and information on performance of these providers, which is often not available. Health care providers valued monitoring and evaluation, which cannot be undertaken without information on indicators of performance. For the County Government, the health department felt that they were not engaged by NHIF and therefore their role in primary care services delivery was not shaped by NHIF but by policies outlined by the National government. This explains why the constant was significant. Which means that even without NHIF engaging County health department, primary care health services will always be accessed by the citizens in the counties of study.

Given the results of this study and borrowing from the systems theory (Mockler, 1968), this study therefore proposes the following framework, see Figure 5.2. The additions to the framework of both Figueras et al., (2005) and RESYST, (2014), are the communication linkage between all the four stakeholders, health systems thinking and the agency relationship between County Government (principal) and health care providers (agents) by the county health department advocating for implementation of standards and guidelines by the providers and strengthening existing monitoring mechanisms, also direct relationship between the citizens (principal) and the health care

provider (agent) where the health care provider will provide accurate information to the citizens as outlined in the contract with NHIF/purchaser and finally the citizen (principal) and the County government (agent), where by the government acting in the best interest of the Citizens will empower the citizens to participate and raise their concerns in public forums and through the administrative mechanisms for example chief barasas, this is likely to increase accountability for use of resources and delivery of NHIF primary care health services.

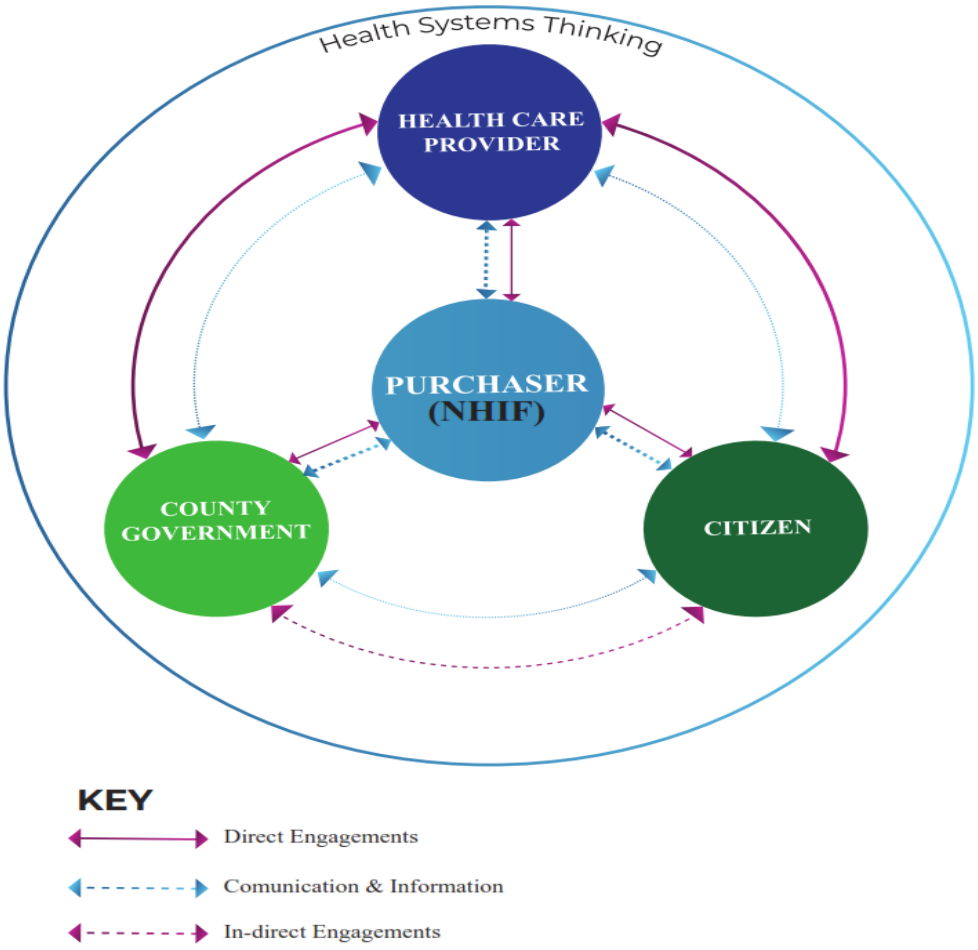

Figure 5.2: Recommended Strategic Purchasing Framework

5.6 Suggestions for Further Research

This study further recommends that a research should be undertaken to establish the extent of engagement of the purchaser/NHIF staff, management and board in strategic

purchasing. The question to be addressed will be, are the front line staff who engage with the citizens aware of the components of strategic purchasing? This is because the knowledge on strategic purchasing may only be a preserve of those in management but not with the staff dealing with citizens, providers and county management directly.

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APPENDICES

Appendix 1: Informed Consent letter

Kenya Methodist University
P. 0 Box 267-60200
MERU, Kenya

SUBJECT: INFORMED CONSENT

Dear Respondent,

My name is Eunice Muthoni Mwangi I am a Doctoral student from Kenya Methodist University. I am conducting a study titled: ***NHIF'S Purchasing Mechanism and Access to Primary Care Health Services in Kenya.*** The findings will be utilized to strengthen the health systems in Kenya and other Low-in- come countries in Africa. As a result, countries, communities and individuals will benefit from improved access to quality primary health services. This research proposal is critical to strengthening health systems as it will generate new knowledge in this area that will inform decision makers to make decisions that are research based.

Procedure to be followed

Participation in this study will require that I ask you some questions. I will record the information from you in a questionnaire check list. You have the right to refuse participation in this study. You will not be penalized nor victimized for not joining the study and your decision will not be used against you nor affect you at your place of employment. Please remember that participation in the study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you are rendering.

Discomforts and risks.

Some of the questions you will be asked are on intimate subject and may be embarrassing or make you uncomfortable. If this happens; you may refuse to answer if you choose. You may also stop the interview at any time. The interview may take about 40 minutes to complete.

Benefits

If you participate in this study you will help us to strengthen the health systems in Kenya and other Low-in-come countries in Africa. As a result, countries, communities and individuals will benefit from improved access to quality healthcare services.

Rewards

There is no reward for anyone who chooses to participate in the study.

Confidentiality

The interviews will be conducted in a private setting. Your name will not be recorded on the questionnaire and the questionnaires will be kept in a safe place at the University.

Contact Information

If you have any questions you may contact the following supervisors:

1. Dr. Wanja Mwaura-Tenambergen
   Head of Department of Health Systems Management
   Kenya Methodist University, Nairobi campus.
   Mobile No. 0726 678 020

2. Dr. Job Mapesa
   Head of Department of Public Health, Nutrition and Dietetics
   Kenya Methodist University, Nairobi campus.
   Mobile No. 0703 567768

Participant's Statement

The above statement regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will not be victimized at my place of work whether I decide to leave the study or not and my decision will not affect the way I am treated at my work place.

Name of Participant……

Date……..

Signature…….

Investigator's Statement

I, the undersigned, have explained to the volunteer in a language s/he understands the procedures to be followed in the study and the risks and the benefits involved.

Name of Interviewer……

Date…….…….

Interviewer Signature……

Appendix 2: Target Population/Health Facilities

	Target Population	Principle	Dependants	Total	
1	Afraha Maternity and Nursing Home	2,268	4,309	6,577	Nakuru
2	AIC Bethsaida Medical Centre	353	621	974	Nakuru
3	Bahati District Hospital	1,451	2,579	4,030	Nakuru
4	Baraka Maternity Nursing Home	63	74	137	Nakuru
5	Benmac Health Clinic	480	697	1,177	Nakuru
6	Bethania Medical Centre	273	605	878	Nakuru
7	Copeman Healthcare Centre	185	273	458	Nakuru
8	Dr. Wabores Clinic	500	970	1,470	Nakuru
9	Elburgon Maternity Home	32	93	125	Nakuru
10	Elburgon Sub-County Hospital	539	1,082	1,621	Nakuru
11	Esther Memorial Maternity Home	2,538	4,243	6,781	Nakuru
12	Familia Bora Medical Centre	133	148	281	Nakuru
13	Family Care	930	1,559	2,489	Nakuru
14	Impact Healthcare	1,437	1,767	3,204	Nakuru
15	Kenlands Health Services Nakuru Maili Sita	657	1,390	2,047	Nakuru
16	Keringet Sub County Hospital	79	157	236	Nakuru
17	Keringet Nursing Home Ltd	59	174	233	Nakuru
18	Mamlaka Medical Centre	20	34	54	Nakuru
19	Marie Stopes Kenya Nakuru Clinic	239	235	474	Nakuru
20	Medicross Limited Nakuru	774	1,227	2,001	Nakuru
21	Mediheal Hospital	8,706	13,528	22,234	Nakuru
22	Mediheal Hospital Nakuru Co. Ltd	18	14	32	Nakuru
23	Mercy Mission Hospital Annex	6,798	11,309	18,107	Nakuru
24	Mirugi Kariuki Dispensary	12	15	27	Nakuru
25	Mogotio Sub-County Hospital	35	51	86	Nakuru
26	Molo District Hospital	2,374	4,269	6,643	Nakuru
27	Mother Kevin Catholic Health Centre	5,501	9,950	15,451	Nakuru
28	Nakuru Nursing And Maternity Home Ltd.	18,231	34,467	52,698	Nakuru
29	Neema Medical Home Limited	117	356	473	Nakuru
30	New Point Medical Centre	2,800	4,724	7,524	Nakuru
31	Njoro Health Centre	949	1,050	1,999	Nakuru
32	Njoro Huduma Medical Centre	4,285	3,699	7,984	Nakuru
33	Oleguruone Subdistrict Hospital	842	1,721	2,563	Nakuru
34	P.C.E.A. Nakuru West Hospital	79	121	200	Nakuru
35	Rapha Medical Centre Nakuru	86	200	286	Nakuru
36	Rift Valley Prov. General Hosp. Nakuru	13,921	21,357	35,278	Nakuru
37	Royal Medical Clinic	56	115	171	Nakuru
38	Sister Mazzoldi Dispensary And Maternity	1,798	2,504	4,302	Nakuru
39	St. Anthony Health Centre	1,215	2,621	3,836	Nakuru
40	St. Clare Health Centre	1,785	3,884	5,669	Nakuru
41	St. Joseph's Nursing And Maternity Hom	6,024	9,386	15,410	Nakuru

	Target Population	Principle	Dependants	Total	
42	Topcare Subukia Medical Centre	597	1,152	1,749	Nakuru
43	Tuti Medical Centre	2,842		2,842	Nakuru
44	A.C,K Nyandarua Medical Centre	90	140	230	Nyandarua
45	Bamboo Health Centre	21	54	75	Nyandarua
46	Chamuka Dispensary	10	-	10	Nyandarua
47	Engineer District Hospital	1,500	2,318	3,818	Nyandarua
48	Fr Baldo Catholic Dispensary	1,445	2,436	3,881	Nyandarua
49	Globe Medical Centre	27	44	71	Nyandarua
50	Heni Health Centre	4	7	11	Nyandarua
51	J.M.Kariuki(Ol Kalou)District Hospital	5,202	7,125	12,327	Nyandarua
52	Kaimbaga Dispensary	4	1	5	Nyandarua
53	Karangatha Health Centre	6	23	29	Nyandarua
54	Kasuku Health Centre	24	18	42	Nyandarua
55	Manunga Health Centre	71	85	156	Nyandarua
56	Mirangine Health Centre	85	122	207	Nyandarua
57	Ndaragwa Health Centre	32	69	101	Nyandarua
58	Ndemi Health Centre	23	47	70	Nyandarua
59	Ngano Health Centre	40	23	63	Nyandarua
60	Njabini Catholic Dispensary	692	1,097	1,789	Nyandarua
61	Njambini Health Centre	14	25	39	Nyandarua
62	North Kinangop Catholic Hospital	10,236	17,052	27,288	Nyandarua
63	Ol-Joroorok Catholic Dispensary	417	751	1,168	Nyandarua
64	Sharom Dispensary	5	4	9	Nyandarua
65	Uruku Dispensary	-	2	2	Nyandarua
66	Wanjohi Health Centre	53	61	114	Nyandarua
67	Aic Kijabe Hospital Naivasha Med. Centre	4,998	7,249	12,247	Naivasha
68	Asn Upendo Village	439	1,255	1,694	Naivasha
69	Finlays Medical Centre	2,863	3,178	6,041	Naivasha
70	Gilgil Sub-County Hospital	2,478	3,327	5,805	Naivasha
71	Goldenlife Victors Hospital Limited	690	771	1,461	Naivasha
72	Holy Spirit Health Centre Gilgil	149	253	402	Naivasha
73	Holy Trinity H/C Longonot	33	52	85	Naivasha
74	Lakeside Intergrated Medical Services	199	170	369	Naivasha
75	Lakeview Maternity and Nursing Home	5,147	6,159	11,306	Naivasha
76	Maai Mahiu Maternity And Hospital	551	971	1,522	Naivasha
77	Marie Stopes Kenya Naivasha Clinic	64	63	127	Naivasha
78	Mt. Longonot Medical Services Limited	2,493	3,184	5,677	Naivasha
79	Mulemi Maternity Nursing Home	702	1,213	1,915	Naivasha
80	Nacohag Medical Centre	389	256	645	Naivasha
81	Naivasha Quality Healthcare Services Ltd	2,792	2,259	5,051	Naivasha
82	Naivasha Sub-County Hospital	9,090	11,701	20,791	Naivasha
83	Ndonyo Health Care	4,882	6,298	11,180	Naivasha
84	Ndonyo Healthcare- Kwa Muhia	88	96	184	Naivasha

	Target Population	Principle	Dependants	Total	
85	New Kimilili Medical Clinic	662	828	1,490	Naivasha
86	Palmed Healthcare	175	303	478	Naivasha
87	Poly-Clinic Hospital	3,514	5,028	8,542	Naivasha
88	The Light Naivasha Doctors Plaza	136	215	351	Naivasha
89	Wayside Medical Clinic	1,277	1,575	2,852	Naivasha
	Total	**155,893**	**236,638**	**392,531**	

Appendix 3: Questionnaire for Citizens Registered under NHIF National

Scheme Date……Month…….....Year.....

Section A: Demographic Characteristics

1. **Facility Level:** Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5 ☐ Level 6 ☐
2. **Facility type** Public ☐ Mission ☐ Private ☐
3. **Sex;** Male ☐ Female ☐
4. **What is your age (years)?**
5. **What is the highest level of education attained?**

1.	None
2.	Primary
3.	Secondary
4.	Certificate
5.	Diploma
6.	Graduate
7.	Post graduate
8.	Any other specify

6. **Are you married?**
   i. Married
   ii. Cohabiting
   iii. Single
   iv. Separated
   v. Divorced
   vi. Widowed
7. **Number of children?**
8. **How many people live in your house and eat from the same pot?**
9. **What is your occupations?**

Employed ☐ Self-employed ☐ Student ☐ Any other (specify) ….

10. **What is your house hold monthly income?**
    Less than KES.10, 000 ☐
    10,001-20,000 ☐
    20,001-30,000 ☐
    30,001-40,000 ☐
    40,001-50,000 ☐
    50,001 and above ☐
11. **How much do you contribute per month? .....**
12. **Are you a principal member or a dependent?**

Principal ☐
Dependent ☐

13. **Are all you dependents registered under your NHIF card? Yes** ☐ **No** ☐

14. **To what extent do you agree with the following statements with Strongly Agree-SA, Agree-A, Not Sure-NS, Disagree-D, Strongly Disagree-SD**

I am always entitled to the following benefits	SA	A	NS	D	SD
a. General consultation					
b. Treatment of local diseases					
c. Basic Lab investigations					
d. Prescription and administration of drugs					
e. Health education and counseling					
f. Management of uncomplicated STIs					
g. Minor surgical procedures under local anesthesia					

15. In your opinion please place a tick on the box that applies to your evaluation of the following statements with **Strongly Agree-SA, Agree-A, Not Sure-NS, Disagree-D, Strongly Disagree-SD**

Statement	SA	A	NS	D	SD
Information/Communication					
a. NHIF provides me with all the information I require					
b. NHIF always explain to me the health services they cover me					
c. NHIF communicates to me regularly					
Citizens Views and Values					
d. NHIF often comes to the community to enquire on our needs					
e. I often participate whenever NHIF does health needs assessment					
f. I am aware of the kind of services the hospital should provide to me					
g. I am fully aware of the NHIF health benefit package					
h. I always have a chance to give feedback to NHIF on services that I receive					
i. I have ever given feedback on services I have received					
j. The feedback given was used to improve the health services in the facility					
NHIF Accountability					
k. Members of the public are allowed to contribute to NHIF decisions.					
l. I am fully aware of what NHIF buys with my monthly contribution					
m. NHIF has public reporting mechanisms on use of funds					
n. I am fully aware of my patients' rights with regard to NHIF membership					
o. NHIF has provided ways for people to raise their complaints					
p. I have ever complained about the services I received					

Statement	SA	A	NS	D	SD
q. NHIF always responds to public complaints					
r. I am able to track down any complaint given to NHIF					
Choice of Provider					
s. NHIF always communicates the rules for selecting a health facility					
t. I understand the rules on selection of a health facility					
u. I chose this health facility at my free will					
v. I can choose more than one health facility under NHIF					
w. NHIF provides adequate number of health facility for the patient to choose from					
x. I have ever changed my health facility under NHIF					
Access to Primary Care services					
y. NHIF outpatient services are always available					
z. NHIF prescribed medicine(s) are always available					
aa. This facility is close to my home					
bb. The cost/fare to the facility is affordable					
cc. Sometimes I am asked to pay for registration, medicines, lab, or x-ray services					
dd. The waiting time is often not long					
ee. Am always treated with courtesy					
ff. I have access to ALL NHIF outpatient services					

Do you have anything more you would want to say in line with this study?

What would you recommend NHIF to do?

Thank you for your cooperation

Appendix 4: Questionnaire for Providers-Facility in-Charge/Finance in Charge

Date ……..Month…….....Year.....

Section A: Demographic Characteristics

1. **Facility Level**: Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5 ☐ Level 6 ☐
2. **Facility type** Public ☐ Mission ☐ Private ☐
3. **Sex** Male ☐ Female ☐
4. **What is your age (years)?**
5. **What is the highest level of education attained?**

a. None
b. Primary
c. Secondary
d. Certificate
e. Diploma
f. Graduate
g. Post graduate
h. Any other specify

6. **Position within the facility**
   Facility in charge ☐
   Finance in charge ☐
   Other (specify) …….
7. **How long have you been working in this facility**……..
8. **State the extent to which you agree with the following statements with strongly agree-SA, Agree-A, Not Sure-NS, Disagree-D, Strongly Disagree-SD**

Communication	**SA**	**A**	**NS**	**D**	**SD**
i. NHIF provides the health facility staff with all the information they require to make decisions on outpatient services					
ii. NHIF always provide adequate information on the benefit package to the patients					
iii. NHIF regularly communicates with the health facility on any updates on benefits					
iv. NHIF provides updated list of members on time					

SECTION B:

9. **In your opinion please place a tick on the box that applies to your evaluation of the following statements with Strongly Agree-SA, Agree-A, Not Sure-NS, Disagree-D, Strongly Disagree-SD**

		SA	A	NS	D	SD
Accreditation of the facility						
i.	NHIF always contracts accredited health facilities to provide outpatient services					
ii.	The health facility staff understand the accreditation criteria used by NHIF					
iii.	Location of the facility to the population is a key consideration in accreditation					
iv.	Wide range of services offered by the facility is always key consideration in accreditation					
v.	The health facility staff are always involved in the accreditation process					
vi.	I am aware of the duration of the accreditation period					
	Service Contracts	**SA**	**A**	**NS**	**D**	**SD**
vii.	The health facility has an updated contract with NHIF for outpatient services					
viii.	The health facility staff understand the terms in the contract with NHIF					
ix.	The health facility has a copy of the service contract for reference purposes					
x.	The facility sometimes refers patients for NHIF outpatient services					
xi.	The service contract outlines the equipment that the facility should have					
xii.	The service contract openly outlines the formularies guidelines to be used					
xiii.	The service contract evidently outlines the standard treatment guidelines					
xiv.	The facility always has upto date records of services provided to NHIF patients					
xv.	The facility always has access to update data of members and their eligible dependants					
xvi.	Principal members often have registered and declared all their authorized dependants					
xvii.	Patients don't engage in fraudulent activities to unlawfully obtain benefits					
xviii.	The facility sometimes receive referred patients for outpatients services under NHIF					
xix.	Having health facilities working together in a network would continually improve on access to outpatient services					

		SA	A	NS	D	SD
	Provider Payments					
xx.	I understand the payment rates per beneficiary per year for outpatient care					
xxi.	The facility continually receives the per capita funds in advance					
xxii.	The facility always receives the per capita payments from NHIF directly to its facility bank account					
xxiii.	The facility sometimes receives the capitation payments through the County office					
xxiv.	The facility always receives the full funds according to registered members for outpatient services care in the facility					
xxv.	The NHIF outpatient payments are regular					
	Monitoring of Performance					
xxvi.	The facility has an internal quality improvement (QI) team					
xvii.	The QI team has an annual implementation plan					
xviii.	The facility allocates a budget for QI activities all the time					
xxix.	The facility staff are aware of Standard Operating Procedures guidelines available for delivery of quality services					
xxx.	The facility is regularly monitored by the NHIF quality assurance team					
xxxi.	The facility always provides unlimited access to NHIF for patients' case notes					
xxii.	The facility is regularly supervised by the County Health quality assurance team					
xxiii.	The facility keeps accurate and orderly accounts in accordance with internationally accepted accounting principles/standards					
xxiv.	The facility always provides quarterly reports to NHIF on services provided including utilization reports/returns					
	Access to outpatient services					
a.	Patients are never asked to pay for NHIF outpatient services (registration, medicines, lab, x-ray services, any other)					
b.	NHIF outpatient services are always available					
c.	NHIF prescribed medicine(s) are always available					
d.	When NHIF registered patients are referred to other health facilities they are required to pay					
e.	This health facility is close to most residents					

	SA	A	NS	D	SD
f. The cost/fare to the health facility is affordable to all patients					
g. The waiting time is often acceptable					
h. Patients are always treated with courtesy					
i. Patients have unlimited access to NHIF outpatient services					

Do you have anything more you would want to say in line with this study?

What would you recommend NHIF to do?

Thank you for your cooperation.

Appendix 5: Questionnaire for CHMTs/SCHMTs

Date……..Month …….....Year.....

County……

SECTION A:

1. **Gender**

   Male ..... ☐

   Female ..... ☐

2. **What is your age (years)?**

3. **What is the highest level of education attained?**

   i. Certificate
   ii. Diploma
   iii. Graduate
   iv. Master and above
   v. Other (specify)

4. How many members are registered under the NHIF **National** Scheme in this County? _____
5. How much is the NHIF capitation amount per month for every member registered with a health facility? _____

SECTION B: NHIF OUTPATIENT SERVICES

6. In your opinion please place a tick on the box that applies to your evaluation of the following statements with **Strongly agree-SA, Agree-A, Not Sure-NS, Disagree-D,** and **Strongly Disagree-SD**

Statement	**SA**	**A**	**NS**	**D**	**SD**
Communication					
a. NHIF provides the County staff with all the information they require to make decisions on outpatient services					
b. NHIF always provide the citizens including me with adequate information on the benefit package					
c. NHIF regularly communicates to the County staff on any updates					
Framework for purchaser under the National Scheme					
d. There exist guidelines on County Health Office and NHIF's ***Outpatient*** mandates					
e. The guidelines existing are up-to-date.					
f. The existing guideline clearly specifies the role of NHIF					

g. The existing guidelines are easily understandable to employees working in the county health office					
h. The existing guidelines clearly explains the role of hospitals under NHIF outpatient scheme					
i. Employees in the County Health Office know what is required of them in supporting hospitals under NHIF outpatient					
Ensuring adequacy in health facility infrastructure					
j. The County has enough facilities to provide outpatient services under NHIF					
k. All public primary care facilities *(dispensaries/health centres)* are contracted with NHIF					
l. The mandate of NHIF contracted health facilities is different from the non-contracted facilities.					
Ensuring adequacy of financial resources mobilized to meet service entitlements					
m. NHIF contracted public facilities attract extra funds through capitation					
n. The NHIF capitation funds are material/significant in the county budget					
o. The NHIF contracted public facilities have an advantage over those not contracted					
p. The NHIF capitation funds have been earmarked for particular programs					
q. The county has recently taken measures to improve the infrastructure for NHIF outpatient services provision					
Ensuring NHIF accountability					
r. NHIF contracted public facilities receive money direct to their bank account					
s. The county receives money on behalf of some NHIF contracted public facilities					
t. The capitation amount paid by NHIF per person is adequate					
u. Sometimes NHIF patients seeking outpatient services lack drugs and supplies					
v. The County Health Office refunds NHIF patients who pay for drugs/supplies not available in public facilities					
w. There is a formal citizen representation in NHIF Board					
x. The county health employees are aware of NHIF responsibilities with regard to outpatient services					
y. The county health employees are aware of the NHIF outpatient benefit package					
z. Employees in the County Health Office are aware of any public reporting mechanisms on use of funds by NHIF					
aa. Employees in the County Health Office understand the patients' rights with regard to NHIF membership					
bb. Employees in the County Health Office understand their responsibility in providing NHIF outpatient services					
cc. The county health employees are aware of the mechanisms NHIF has provided ***for patients*** to forward complain(s)					

dd. The county health employees are aware of the mechanisms NHIF has provided ***for them*** to forward complain(s)					
ee. NHIF often addresses the complains to improve service provision for their beneficiaries					
Access to NHIF outpatient Services					
ff. NHIF outpatient services are always available					
gg. NHIF prescribed medicine(s) are always available					
hh. Most NHIF members have registered with facilities close to their homes					
ii. The cost/fare to the facilities is affordable to majority					
jj. Sometimes NHIF patients are asked to pay for registration, medicines, lab, or x-ray services					
kk. The waiting time is often not long					
ll. Patients are always treated with courtesy					
mm. Our patients have access to ALL NHIF outpatient services					

Do you have anything more you would want to say in line with this study?

What would you recommend NHIF to do?

Thank you for your cooperation.

Appendix 6: Kenya Methodist University Scientific and Ethics Review Approval

KENYA METHODIST UNIVERSITY
P. O. BOX 267 MERU - 60200, KENYA
TEL: 254-064-30301/31229/30367/31171
FAX: 254-64-30162
EMAIL: INFO@KEMU.AC.KE

24TH JANUARY, 2017

Eunice Muthoni Mwangi
HSM-4-4496-3/2014
Kenya Methodist University

Dear Eunice,

SUBJECT: ETHICAL CLEARANCE OF A Ph.D. RESEARCH THESIS

Your request for ethical clearance for your Ph.D. Research titled **"Purchasing Mechanism in Ensuring Access to Primary Care Services: A Case of National Hospital Insurance Fund Scheme in Kenya"** has been granted to you in accordance with the content of your thesis proposal.

As Principal Investigator, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the Thesis.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the SERC for re-review and approval prior to the activation of the changes. The Thesis number assigned to the Thesis should be cited in any correspondence.
3. Adverse events should be reported to the SERC. New information that becomes available which could change the risk: benefit ratio must be submitted promptly for SERC review. The SERC and outside agencies must review the information to determine if the protocol should be modified, discontinued, or continued as originally approved.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by subjects and/or witnesses should be retained on file. The SERC may conduct audits of all study records, and consent documentation may be part of such audits.

5. SERC regulations require review of an approved study not less than once per 12-month period. **Therefore, a continuing review application must be submitted to the SERC in order to continue the study beyond the approved period.** Failure to submit a continuing review application in a timely fashion will result in termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.

Please note that any substantial changes on the scope of your research will require an approval.

Thank You.

KENYA METHODIST UNIVERSITY
RESEARCH & DEVELOPMENT
06 MAR 2017
DISPATCHED
P.O. Box

Dr. Wamachi
Chair, SERC
Cc: Dean, RD&PGS

Appendix 7: NACOSTI Approval

THIS IS TO CERTIFY THAT:
MS. EUNICE MUTHONI MWANGI
of KENYA METHODIST UNIVERSITY,
415-20303 ol kalou,has been permitted
to conduct research in *Nakuru , Nyandarua Counties*

on the topic: *PURCHASING MECHANISM IN ENSURING ACCESS TO PRIMARY CARE SERVICES: A CASE OF NATIONAL HOSPITAL INSURANCE FUND SCHEME IN KENYA*

for the period ending:
7th March,2018

Permit No : NACOSTI/P/17/79210/15823
Date Of Issue : 8th March,2017
Fee Recieved :Ksh 2000

Applicant's Signature

Director General
National Commission for Science, Technology & Innovation

Appendix 8: Approval from Nyandarua County

REPUBLIC OF KENYA

COUNTY GOVERNMENT OF NYANDARUA
OFFICE OF THE DIRECTOR -HEALTH SERVICES

Telephone: 0729289853/0776020676
Email: mohnyandaruacounty@gmail.com

P.O. Box 221-20303
Ol'Kalou

REF: NYA/CHC/091/VOL.1/59

23rd February 2017

Eunice Muthoni Mwangi

RE: RESEARCH AUTHORIZATION

Pursuant to authorization of your research on, "Purchasing Mechanism in Ensuring Access to Primary Care Services: A Case of National Hospital Insurance Fund Scheme in Kenya dated 17th February 2017, Nyandarua County Department of Health has no objection.

Kindly share the results of your study with the Department upon completion.

Dr. Z. KARIUKI GICHUKI
COUNTY DIRECTOR OF HEALTH
NYANDARUA COUNTY

Cc

County Secretary
Nyandarua County

County Executive Committee Member for Health
Nyandarua County

Chief Officer – Health Services
Nyandarua County

Appendix 9: Approval from Nakuru County

17th February, 2017

Eunice Muthoni Mwangi
Kenya Methodist University
P.o Box 45240-00100
Mobile;-0722 986 349
Nairobi

To

The County Secretary-Health
Nakuru County

Received and approved
All health facilities in charges
to facilitate

CHIEF OFFICER
HEALTH SERVICES
NAKURU COUNTY
Date 22/2/17 Sign

Re: Approval to Undertake Research in NHIF Accredited Health

Facilities in Nakuru County

The above information refers.

I am a Doctoral student in Health Systems Management, at the Kenya Methodist University. I am undertaking a research on ***"Purchasing Mechanism in Ensuring Access to Primary Care Services: A Case of National Hospital Insurance Fund Scheme in Kenya"***. I hereby write to request for your approval to undertake my research in ~~Kiambu~~ Nakuru County. Any information that will lead to the success of this study will be highly appreciated.

The feedback of this research will be shared to the county to enhance policy implementation.

Thank you.

Yours Faithfully,

Eunice Muthoni Mwangi
ID 22363034

Appendix 10: Approval from Kiambu County

COUNTY GOVERNMENT OF KIAMBU
DEPARTMENT OF HEALTH SERVICES

All correspondence should be addressed to
HEAD HRDU – HEALTH DEPARTMENT
Email address: mndiritu@gmail.com
mkwasa@live.com
Mobile: 0721641516
0721974633

HEALTH RESEARCH AND DEVELOPMENT UNIT
P. O. BOX 2344 – 00900
KIAMBU

Ref. No: KIAMBU/HRDU/AUTHO/2017/02/19/Mwangi EM

Date: February 19, 2017

TO WHOM IT MAY CONCERN

RE: CLEARANCE TO CONDUCT RESEARCH IN KIAMBU COUNTY

Kindly note that we have received a request by Ms. Eunice Muthoni Mwangi of Kenya Methodist University to carry out research in Kiambu County, the research topic being on ***"Purchasing Mechanism in Ensuring Access to Primacy Care Services: A case of National Hospital Insurance Fund Scheme in Kenya"***.

We have duly inspected her documents and found that she has been cleared by Kenya Methodist University Scientific and Ethical Review Committee until 6th Feb 2018. She thus does not need any further clearance with another regulatory body in order to conduct research within the county of Kiambu.

However, it is incumbent upon the facility in which the research is being carried out to ensure that they are conversant with the remit of the study and operate in line with their institutional norms on conducting research. This note also accords her the duty to provide a feedback on her research to the county at the conclusion of her research.

DR. M. NDIRITU NDIRANGU
COUNTY HEALTH RESEARCH DEVELOPMENT UNIT
KIAMBU COUNTY

Appendix 11: Patients Inferential Statistics

Cross Tabulation/Chi Square Measure of Association

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Access recoded * Benefits recoded	395	100.0%	0	0.0%	395	100.0%
Access recoded * communication recoded	395	100.0%	0	0.0%	395	100.0%
Access recoded * Accountability recoded	395	100.0%	0	0.0%	395	100.0%
Access recoded * Primary Provider Choice recoded	395	100.0%	0	0.0%	395	100.0%
Access recoded * Views and Values recoded	395	100.0%	0	0.0%	395	100.0%

Access recoded * Benefits recoded

Crosstab

Count

		Benefits recoded		Total
		Disagree	Agree	
Access recoded	Disagree	11	100	111
	Agree	18	266	284
Total		29	366	395

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.497[a]	1	.221		
Continuity Correction[b]	1.018	1	.313		
Likelihood Ratio	1.417	1	.234		
Fisher's Exact Test				.282	.156
Linear-by-Linear Association	1.493	1	.222		
N of Valid Cases	395				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.15.

b. Computed only for a 2x2 table

Access recoded * communication recoded

Crosstab

Count

		communication recoded		Total
		Disagree	Agree	
Access recoded	Disagree	73	38	111
	Agree	96	188	284
Total		169	226	395

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	33.307[a]	1	.000		
Continuity Correction[b]	32.014	1	.000		
Likelihood Ratio	33.320	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	33.223	1	.000		
N of Valid Cases	395				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 47.49.

b. Computed only for a 2x2 table

Access recoded * Accountability recoded

Crosstab

Count

		Accountability recoded		Total
		Disagree	Agree	
Access recoded	Disagree	97	14	111
	Agree	175	109	284
Total		272	123	395

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	24.712[a]	1	.000		
Continuity Correction[b]	23.525	1	.000		
Likelihood Ratio	27.609	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	24.650	1	.000		
N of Valid Cases	395				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 34.56.

b. Computed only for a 2x2 table

Access recoded * Primary Provider Choice recoded

Crosstab

Count

		Choice recoded		Total
		Disagree	Agree	
Access recoded	Disagree	62	49	111
	Agree	64	220	284
Total		126	269	395

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	40.789[a]	1	.000		
Continuity Correction[b]	39.269	1	.000		
Likelihood Ratio	39.185	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	40.686	1	.000		
N of Valid Cases	395				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 35.41.

b. Computed only for a 2x2 table

Access recoded * Views and Values recoded

Crosstab

Count

		ValuesII recoded		Total
		Disagree	Agree	
Access recoded	Disagree	98	13	111
	Agree	182	102	284
Total		280	115	395

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	22.654[a]	1	.000		
Continuity Correction[b]	21.497	1	.000		
Likelihood Ratio	25.465	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	22.597	1	.000		
N of Valid Cases	395				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 32.32.

b. Computed only for a 2x2 table

Bivariate Analysis

Knowledge of NHIF benefits and Access to NHIF Primary Care Health Services

Model Summary

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
1	467.770[a]	.004	.005

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Benefits(1)	.486	.400	1.473	1	.225	1.626	.742	3.562
	Constant	.492	.383	1.656	1	.198	1.636		

a. Variable(s) entered on step 1: Benefits.

NHIF Accountability and Access to NHIF Primary Care Health Services

Model Summary

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
1	441.577[a]	.068	.097

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Accountability(1)	1.462	.311	22.127	1	.000	4.316	2.347	7.936
	Constant	.590	.127	21.730	1	.000	1.804		

a. Variable(s) entered on step 1: Accountability.

NHIF Communication to Citizens and Access to NHIF Primary Care Health Services

Model Summary

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
1	435.867[a]	.081	.116

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	communication(1)	1.325	.236	31.489	1	.000	3.762	2.368	5.976
	Constant	.274	.155	3.111	1	.078	1.315		

a. Variable(s) entered on step 1: communication.

Citizen Views and Values and Access to NHIF Primary Care Health Services

Model Summary

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
1	443.721[a]	.062	.090

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	valuesII(1)	1.441	.320	20.273	1	.000	4.225	2.256	7.911
	Constant	.619	.125	24.410	1	.000	1.857		

a. Variable(s) entered on step 1: Citizens views and values

Choice of Primary Care Provider and Access to NHIF Primary Care Health Services

Model Summary

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
1	430.002[a]	.094	.136

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Providerchoice(1)	1.470	.238	38.109	1	.000	4.349	2.727	6.936
	Constant	.032	.178	.032	1	.859	1.032		

a. Variable(s) entered on step 1: Primary Care Provider choice.

Multivariate Analysis

Model Summary

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
1	400.989[a]	.159	.228

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	5.412	6	.492

Classification Table[a]

	Observed		Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	39	72	35.1
		Agree	31	253	89.1
	Overall Percentage				73.9

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Benefits(1)	-.007	.443	.000	1	.987	.993	.417	2.366
	communication(1)	.858	.266	10.367	1	.001	2.358	1.399	3.975
	Accountability(1)	.729	.363	4.031	1	.045	2.073	1.017	4.226
	Primary Provider choice(1)	1.095	.254	18.582	1	.000	2.990	1.817	4.920
	Views and values (1)	.384	.385	.993	1	.319	1.468	.690	3.124
	Constant	-.415	.434	.916	1	.338	.660		

a. Variable(s) entered on step 1: Benefits, communication, Accountability, Provider choice, views and values.

Appendix 12: Provider Inferential Statistics

Chi-Square Measure of Association

Crosstab

Count

		communication recoded		Total
		Disagree	Agree	
Access recoded	Disagree	3	3	6
	Agree	13	47	60
Total		16	50	66

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.384[a]	1	.123		
Continuity Correction[b]	1.091	1	.296		
Likelihood Ratio	2.073	1	.150		
Fisher's Exact Test				.148	.148
Linear-by-Linear Association	2.348	1	.125		
N of Valid Cases	66				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.45.
b. Computed only for a 2x2 table

Crosstab

Count

		Accreditation recoded		Total
		Disagree	Agree	
Access recoded	Disagree	3	3	6
	Agree	7	53	60
Total		10	56	66

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.235[a]	1	.013		
Continuity Correction[b]	3.609	1	.057		
Likelihood Ratio	4.598	1	.032		
Fisher's Exact Test				.040	.040
Linear-by-Linear Association	6.140	1	.013		
N of Valid Cases	66				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is .91.
b. Computed only for a 2x2 table

Crosstab

Count

		Service Contract recoded		Total
		Disagree	Agree	
Access recoded	Disagree	2	4	6
	Agree	6	54	60
Total		8	58	66

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.788[a]	1	.095		
Continuity Correction[b]	1.028	1	.311		
Likelihood Ratio	2.104	1	.147		
Fisher's Exact Test				.151	.151
Linear-by-Linear Association	2.746	1	.098		
N of Valid Cases	66				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is .73.
b. Computed only for a 2x2 table

Crosstab

Count

		provider payments recoded		Total
		Disagree	Agree	
Access recoded	Disagree	4	2	6
	Agree	17	43	60
Total		21	45	66

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.695[a]	1	.055		
Continuity Correction[b]	2.139	1	.144		
Likelihood Ratio	3.398	1	.065		
Fisher's Exact Test				.076	.076
Linear-by-Linear Association	3.639	1	.056		
N of Valid Cases	66				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.91.
b. Computed only for a 2x2 table

Crosstab

Count

		monitoring recoded		Total
		Disagree	Agree	
Access recoded	Disagree	5	1	6
	Agree	10	50	60
Total		15	51	66

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	13.804[a]	1	.000		
Continuity Correction[b]	10.269	1	.001		
Likelihood Ratio	11.273	1	.001		
Fisher's Exact Test				.002	.002
Linear-by-Linear Association	13.595	1	.000		
N of Valid Cases	66				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.36.
b. Computed only for a 2x2 table

Bivariate Analysis

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	38.139[a]	.031	.068

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	0	6	.0
		Agree	0	60	100.0
	Overall Percentage				90.9

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	communication(1)	1.285	.875	2.160	1	.142	3.615	.651	20.072
	Constant	1.466	.641	5.241	1	.022	4.333		

a. Variable(s) entered on step 1: communication.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	35.614[a]	.067	.147

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	0	6	.0
		Agree	0	60	100.0
	Overall Percentage				90.9

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1[a]	Accreditation(1)	2.024	.910	4.947	1	.026	7.571	1.272	45.072
	Constant	.847	.690	1.508	1	.220	2.333		

a. Variable(s) entered on step 1: Accreditation.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	38.108[a]	.031	.069

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	0	6	.0
		Agree	0	60	100.0
	Overall Percentage				90.9

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Service contract(1)	1.504	.967	2.419	1	.120	4.500	.676	29.948
	Constant	1.099	.816	1.810	1	.178	3.000		

a. Variable(s) entered on step 1: Service contract.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	36.814[a]	.050	.110

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	0	6	.0
		Agree	0	60	100.0
	Overall Percentage				90.9

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Provider payments(1)	1.621	.912	3.158	1	.076	5.059	.846	30.234
	Constant	1.447	.556	6.779	1	.009	4.250		

a. Variable(s) entered on step 1: Provider payments.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	28.939[a]	.157	.344

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	0	6	.0
		Agree	0	60	100.0
	Overall Percentage				90.9

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Monitoring performance(1)	3.219	1.149	7.849	1	.005	25.000	2.630	237.627
	Constant	.693	.548	1.602	1	.206	2.000		

a. Variable(s) entered on step 1: monitoring performance.

Multivariate Analysis

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	23.975[a]	.218	.478

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	3.606	4	.462

Classification Table[a]

Observed			Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	2	4	33.3
		Agree	1	59	98.3
	Overall Percentage				92.4

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	communication(1)	-1.030	1.454	.502	1	.479	.357	.021	6.172
	Accreditation(1)	1.624	1.333	1.485	1	.223	5.074	.372	69.130
	Service contract(1)	-.637	1.428	.199	1	.656	.529	.032	8.689
	Provider payments(1)	2.942	1.580	3.468	1	.063	18.959	.857	419.492
	monitoring performance(1)	3.442	1.524	5.099	1	.024	31.254	1.575	620.053
	Constant	-.829	1.275	.422	1	.516	.437		

a. Variable(s) entered on step 1: communication, Accreditation, Service contract, Provider payments, monitoring performance.

Appendix 13: County Health Management Inferential Statistics

Chi Square Measure of Association

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Access recoded * communication recoded	115	100.0%	0	0.0%	115	100.0%
Access recoded * Guidelines recoded	115	100.0%	0	0.0%	115	100.0%
Access recoded * Infrastructure recoded	115	100.0%	0	0.0%	115	100.0%
Access recoded * Resources recoded	115	100.0%	0	0.0%	115	100.0%
Access recoded * Accountability recoded	115	100.0%	0	0.0%	115	100.0%

Crosstab

Count

		communication recoded		Total
		Disagree	Agree	
Access recoded	Disagree	40	26	66
	Agree	19	30	49
Total		59	56	115

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.364[a]	1	.021		
Continuity Correction[b]	4.526	1	.033		
Likelihood Ratio	5.405	1	.020		
Fisher's Exact Test				.024	.016
Linear-by-Linear Association	5.318	1	.021		
N of Valid Cases	115				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 23.86.

b. Computed only for a 2x2 table

Crosstab

Count

		Guidelines recoded		Total
		Disagree	Agree	
Access recoded	Disagree	36	30	66
	Agree	12	37	49
Total		48	67	115

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.447[a]	1	.001		
Continuity Correction[b]	9.247	1	.002		
Likelihood Ratio	10.768	1	.001		
Fisher's Exact Test				.002	.001
Linear-by-Linear Association	10.356	1	.001		
N of Valid Cases	115				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 20.45.

b. Computed only for a 2x2 table

Crosstab

Count

		Infrastructure recoded		Total
		Disagree	Agree	
Access recoded	Disagree	34	32	66
	Agree	9	40	49
Total		43	72	115

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	13.199[a]	1	.000		
Continuity Correction[b]	11.821	1	.001		
Likelihood Ratio	13.858	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	13.084	1	.000		
N of Valid Cases	115				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.32.

b. Computed only for a 2x2 table

Crosstab

Count

		Resources recoded		Total
		Disagree	Agree	
Access recoded	Disagree	47	19	66
	Agree	23	26	49
Total		70	45	115

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.956[a]	1	.008		
Continuity Correction[b]	5.975	1	.015		
Likelihood Ratio	6.969	1	.008		
Fisher's Exact Test				.012	.007
Linear-by-Linear Association	6.896	1	.009		
N of Valid Cases	115				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.17.

b. Computed only for a 2x2 table

Crosstab

Count

		Accountability recoded		Total
		Disagree	Agree	
Access recoded	Disagree	38	28	66
	Agree	13	36	49
Total		51	64	115

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.982[a]	1	.001		
Continuity Correction[b]	9.760	1	.002		
Likelihood Ratio	11.280	1	.001		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	10.886	1	.001		
N of Valid Cases	115				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.73.

b. Computed only for a 2x2 table

Bivariate Analysis

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	151.497[a]	.046	.062

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	40	26	60.6
		Agree	19	30	61.2
	Overall Percentage				60.9

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Communication(1)	.888	.387	5.272	1	.022	2.429	1.139	5.182
	Constant	-.744	.279	7.139	1	.008	.475		

a. Variable(s) entered on step 1: **Communication.**

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	146.133[a]	.089	.120

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	36	30	54.5
		Agree	12	37	75.5
	Overall Percentage				63.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	guidelines(1)	1.308	.414	9.983	1	.002	3.700	1.643	8.331
	Constant	-1.099	.333	10.863	1	.001	.333		

a. Variable(s) entered on step 1: **National Scheme guidelines.**

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	143.043[a]	.114	.153

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

Observed		Predicted		
		Access recoded		Percentage Correct
		Disagree	Agree	
Step 1	Access recoded Disagree	34	32	51.5
	Access recoded Agree	9	40	81.6
	Overall Percentage			64.3

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Infrastructure (1)	1.552	.444	12.245	1	.000	4.722	1.980	11.265
	Constant	-1.329	.375	12.572	1	.000	.265		

a. Variable(s) entered on step 1: **Health Facility Infrastructure.**

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	149.933[a]	.059	.079

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Classification Table[a]

Observed		Predicted		
		Access recoded		Percentage Correct
		Disagree	Agree	
Step 1	Access recoded Disagree	47	19	71.2
	Access recoded Agree	23	26	53.1
	Overall Percentage			63.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	capitation funds (1)	1.028	.395	6.785	1	.009	2.796	1.290	6.062
	Constant	-.715	.254	7.887	1	.005	.489		

a. Variable(s) entered on step 1: **Capitation funds.**

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	145.621[a]	.093	.126

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

	Observed		Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	38	28	57.6
		Agree	13	36	73.5
	Overall Percentage				64.3

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	NHIF Accountability(1)	1.324	.408	10.513	1	.001	3.758	1.688	8.367
	Constant	-1.073	.321	11.145	1	.001	.342		

a. Variable(s) entered on step 1: NHIF Accountability.

Multivariate Analysis

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	134.509[a]	.177	.238

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	2.924	6	.818

Classification Table[a]

	Observed		Predicted		
			Access recoded		Percentage Correct
			Disagree	Agree	
Step 1	Access recoded	Disagree	50	16	75.8
		Agree	16	33	67.3
	Overall Percentage				72.2

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Communication(1)	-.270	.566	.227	1	.633	.763	.252	2.315
	guidelines(1)	.805	.532	2.286	1	.131	2.237	.788	6.351
	Infrastructure(1)	.920	.514	3.197	1	.074	2.508	.915	6.873
	Capitation Funds(1)	.723	.454	2.532	1	.112	2.060	.846	5.017
	NHIF Accountability(1)	.633	.535	1.401	1	.237	1.883	.660	5.373
	Constant	-1.934	.463	17.412	1	.000	.145		

a. Variable(s) entered on step 1: Communication, guidelines, Infrastructure, Capitation Funds, NHIF Accountability.

Appendix 14: Strategic Purchasing Activities

Appendix 15: Publication in International Journal of Community Medicine & Public Health

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Original Research Article

Citizen engagement in social health insurance purchasing, in selected counties in Kenya

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ABSTRACT

Background: National hospital insurance fund (NHIF) uses capitation as a strategic purchasing model to provide primary care health services (PCHS). This study sought information on citizen knowledge of PCHS benefit package, NHIF communication to citizens, determination of citizen views and values, NHIF accountability to citizens, citizen choice of PCHS provider and how these factors influence citizen access to NHIF, PCHS.
Methods: This was a cross sectional research conducted between March 2017 to March 2018. 426 patients were sampled from Nyandarua and Nakuru Counties.
Results: 366 (93%) patients knew the PCHS benefit package, 226 (57%) said NHIF communication to them was adequate, 280 (71%) said NHIF does not take into account their view and values, 272 (69%) said NHIF is not accountable to them, 269 (68%) knew how to select an outpatient facility, 111 (28%) said they did not receive NHIF, PCHS. Multivariate logistics regression analysis of citizen engagement factors and access to PCHS, indicate that NHIF communication to citizens ($p<0.05$, OR=2.358, 95% CI [1.399-3.975]), purchaser accountability ($p<0.05$, OR=2.073, 95% CI [1.017-4.226]) and provider choice ($p<0.05$, OR=2.990, 95% CI [1.817-4.920]) added significantly to the regression model.
Conclusions: There is inadequate engagement of citizens in NHIF decision making which may hinder access to NHIF PCHS, therefore NHIF should establish citizens' needs and preference through public forums, elicit citizens' feedback, act on complains when raised, inform citizens on how the capitation system works and NHIF should visit health facilities regularly to establish if patients are accessing PCHS.

Keywords: Universal health coverage, Social insurance, Primary care health services, National scheme, Citizens, Kenya

INTRODUCTION

Strategic purchasing should be looked at from a broad perspective beyond contracting health care providers it includes the role played by citizens, providers, governments and the purchasers.[1] If policy makers and implementers are to realize desired results, they need act upon all the different components of the purchasing function. National hospital insurance fund (NHIF) is undertaking strategic purchasing of primary care health services under the National scheme. As such the authors saw it necessary to evaluate the engagement of citizens in purchasing of these services, as they are key stakeholders in strategic purchasing.

NHIF is the sole social insurer in Kenya, other purchasers within the Kenyan Health Financing System are households, the government (National and Country), private health insurance and community based health insurance. However NHIF has been identified as one of the organizations that will purchase health care services for Kenyans under universal health coverage (UHC) reforms.[2] Focus on NHIF is justified by the fact that

NHIF insures more than 15% of Kenya's total population which is about 88.4% of 17% of persons with health insurance in Kenya. Private insurance covers 9.4%, community-based insurance 1.3%, and other forms of insurance covers 1.0%, of 17% of persons with health insurance in Kenya.

NHIF being the only social health insurer in Kenya has made strides to meet the criteria of prepayment and pooling of resources and risks which are basic principles in financial-risk protection. This is in line with the fifty-eighth World Health Assembly resolutions on sustainable health financing, UHC and social insurance. There is therefore need to assess how NHIF purchasing mechanism is organized, since purchasing creates a link between pooled funds and effective services. If any country is going to achieve universal access, they ought to move from passive to active or strategic purchasing. Strategic purchasing aims to increase health systems' performance through effective allocation of financial resources to providers.[3]

One of the central elements in strategic purchasing theory is that a purchaser represents the wishes and needs of the citizens. Key strategic purchasing actions in relation to citizens or population served are assessing the service needs, preferences and values of the population and use to specify service entitlements or benefits, inform the population of their entitlements and obligations, ensuring population can access their entitlements, establishing effective mechanisms to receive and respond to complaints and feedback from the population, and publicly report on use of resources and other measures of performance.[4] Further resilient and responsive health systems outlined the specific strategic purchasing actions of NHIF towards the citizens.[5] In determining whether NHIF is undertaking these actions, citizens were asked on their experiences as members of the social insurance.

This study aimed to establish the extent of citizen engagement in NHIF purchasing of PCHS. Specifically, the study sought information on citizen knowledge of benefit package, NHIF communication to citizens, determination of citizen views and values, NHIF accountability to citizens, citizen choice of PCHS provider and how they all influence access to NHIF, PCHS.

METHODS

Research design

This was a descriptive cross sectional research. Data was collected using structured questionnaires from the patients under the Social Insurer's National Scheme.

Sampling procedures and sample size

The study focused on urban (Nakuru County) from rift valley region and rural (Nyandarua County) from Central Kenya region. The two were chosen due to the variations in social economic status of the populations, which influences how populations access primary care health services.[6] Given that the target population registered under the National Scheme is more than 10,000 people in the two counties, a sample of 384 respondents plus an additional 10% adding to 426 respondents was drawn for the study. Out of 89 health facilities accredited by NHIF to provide PCHS, a sample of 72 was drawn using multistage sampling.

Data analysis

Out of 426 patients only 395 questionnaires were responded to. These patients were drawn from 66 out of 72 health facilities. Data was analysed using both descriptive and inferential statistics using SPSS version 21. Bivariate analysis using Pearsons Chi-square was used to compare the variables for factor analysis between the each independent and the dependent variable. An adjusted odds ratio at 95% confidence was used to test the strength of association. The threshold for statistical significance (p value) was set at $p<0.05$. Logistic regression was used to correlate the independent variables and the dependent variable. In this study, psychometric Likert scale of 5 (5-strongly agree, 4-agree, 3-not sure, 2-disagree, 1-strongly disagree) based questions were recoded from five point Likert scale to binary variables. This was guided by the dependent variable which is access to NHIF primary care health services. It was assumed that the patients can have access or no access to primary care health services. The 3-not sure, 2-disagree, and 1-strongly disagree responses were recoded into no access, while else 5-strongly agree, 4-agree responses were recoded into access. Perceived access was used to measure implementation of the primary care health services. Similar recoding was done for all the independent variables.

Ethical approval

This was obtained from the Kenya Methodist University Scientific, Ethics and Review Committee and from the National Commission of Science and Technology and Innovation (NACOSTI/P/17/79210/15823). Approval was also obtained from the County Director of Health in both counties and Health facility in charges of the 66 health facilities. Informed consent was sought from the patients, and participation in this study was on voluntary basis.

RESULTS

Access to NHIF primary care health services

Perception was sought on whether the respondents had access to all NHIF outpatient services. This was determined by responses on services availability, drug availability, services affordability, distance to seek health

services and the cost incurred in accessing the NHIF outpatient facility. Responses are indicated in Figure 1.

The results show that majority 257 (65%) of the respondent agreed to NHIF outpatient services being available, however majority 188 (48%) indicated that NHIF prescribed medicine (s) were not always available, or they were not sure of drugs availability 42 (11%). Most 314 (79%) of the respondent agreed that the health facility they had chosen was close to their home and that the cost or fare to the facility was affordable 338 (86%). However most 226 (57%) said the NHIF outpatient service were not affordable, since they were charged for services such as drugs, laboratory tests and X-rays. Most indicated that the waiting time is often not long 256 (65%) and that they were always treated with courtesy 335 (74%). Despite lacking drugs and being charged for services, most 208 (56%) of the respondents indicated that they had access to all NHIF outpatient services.

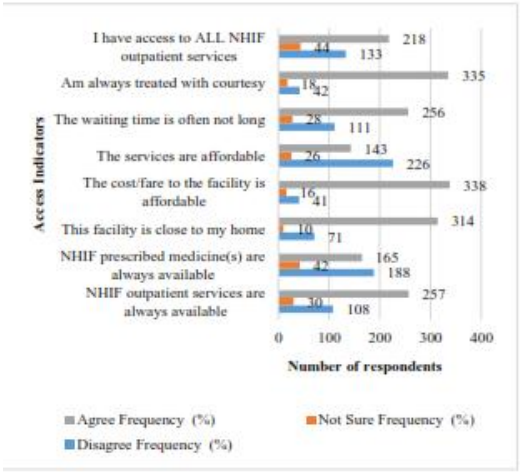

Figure 1: Citizens' perception on access to NHIF primary care services (n=395).

Citizens' knowledge of the benefit package

The study sought to establish the citizens' knowledge of the health benefit package under NHIF National Scheme, as this was deemed to influence the citizens' access to primary care services. Majority of the patients were knowledgeable on their entitlement to general consultation 377 (95%), treatment of local disease 373 (94%), basic laboratory investigations 326 (82%), prescription and administration of drugs 336 (86%), health education, counseling, ongoing support 236 (60%), management of uncompleted STIs 246 (62%) and minor surgical procedures 263 (67%). However it was evident that some of respondents were not sure of their entitlement in three areas i.e., health education, counseling and ongoing support 99 (25%), management of uncompleted STIs 105 (27%) and minor surgical procedures, 84 (21%). This information was further simplified through binary coding of the responses to those who agreed to know the NHIF health benefit package under the national scheme and those who did not know the health benefit package. This is as presented in the Figure 2.

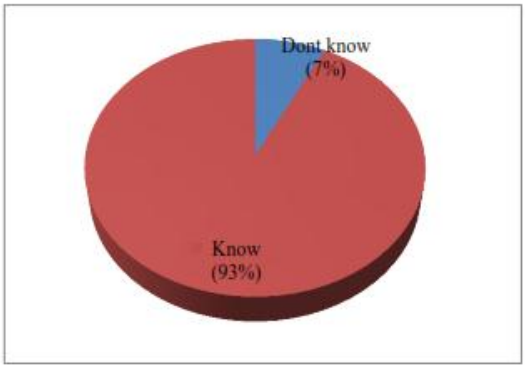

Figure 2: Citizens' knowledge of NHIF primary care services benefit package.

Majority of the patients 366 (93%) indicated that they knew the NHIF health benefit package and only 29 (7%) did not know.

Citizens' perception on communication by NHIF

The study sought to establish the information sharing mechanisms by NHIF to the citizens. The results are shown in Figure 3.

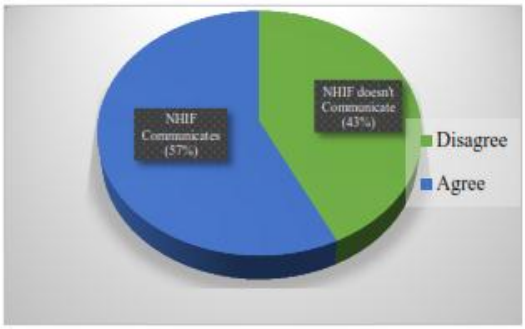

Figure 3: NHIF communication to citizens.

Most of the respondents 226 (57%) indicated that NHIF provides them with information they require to make informed decisions and that NHIF explains to them the health services they are covered for. However, the number of those who did not agree 169 (43%), was a result of NHIF not making the communication to the citizens regular. Some of the mechanisms that NHIF uses to communicate included, short mobile messages, television, print media, face to face when the patients visit the NHIF's office and through pamphlets.

Citizens' views and values under NHIF National Scheme

The respondents' perceptions were sought on whether NHIF takes into account their views and values by engaging the citizens in the community or if there are any feedback mechanisms that NHIF has set to collect their views and values. Nearly a third 253 (64%) disagreed that NHIF often visits the community to enquire on their needs. Majority of the respondents also disagreed that NHIF has feedback mechanisms that they can use to give their views and values to NHIF. More than half of the respondents, 231 (58%) disagreed to the fact that they have a chance to give feedback to NHIF on services that they receive. Moreover, a third 267 (68%) of the respondents indicated that they have never given any feedback and therefore most 216 (55%) did not know if feedback given can be used to improve the health services in the facility. Further simplification of this information by recoding the data into binary variables of whether the patients agreed to their views and values being taken into account by NHIF or if they disagreed. The results are shown in Figure 4.

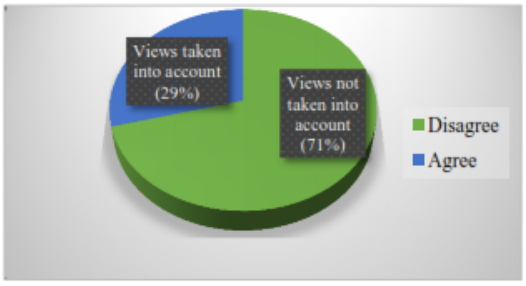

Figure 4: Citizens' views and values ascertained.

Majority of the respondents 280 (71%) are of the view that NHIF does not take into account their view and values, given that the patients are not aware of any feedback mechanisms available for them to give their opinions on the services they receive under NHIF national scheme. Further most disagreed with the statement on NHIF visiting the community to enquire on their needs.

NHIF's accountability to citizens under National Scheme

The respondents were asked to evaluate their opinion on whether NHIF is accountable to them in the areas of there being any mechanisms to report on use of funds, members of the public being allowed to contribute to NHIF decisions, members being aware of what NHIF buys with their monthly contribution, members being fully aware of their patients' rights with regard to NHIF membership, NHIF providing ways for people to raise their complaints and responding to these complains. Majority 196 (50%) of the respondents disagreed to members of the public being allowed to contribute to NHIF decisions. While citizen representation in NHIF board is there in Kenya, citizen seems not to be aware of how they are represented. Majority of the respondents 224 (57%) were not fully aware of what NHIF buys with their monthly contribution, neither 230 (58%) were they aware of any mechanism NHIF has to publicly declare the use of citizens' funds. Majority 217 (55%) were however aware of their patients' rights with regard to NHIF membership, however they disagreed 138 (43%) or were not sure 105 (27%) of NHIF having ways for people to rise complaints. Majority 162 (41%) were not sure as to whether NHIF responds to public complaints.

Table 1: Enforcing NHIF's accountability by citizens (n=395).

NHIF's accountability	Strongly disagree	Disagree	Not sure	Agree	Strongly agree	Chi-square	P-value
	N (%)	N (%)	N (%)	N (%)	N (%)		
Members of the public are allowed to contribute to NHIF decisions	118 (30)	78 (20)	100 (25)	53 (13)	46 (12)	47.19	0.001
I am fully aware of what NHIF buys with my monthly contribution	154 (39)	70 (18)	83 (21)	56 (14)	32 (8)	107.09	0.001
NHIF has public reporting mechanisms on use of funds	155 (39)	75 (19)	105 (27)	28 (7)	32 (8)	142.76	0.001
I am fully aware of my patients' rights with regard to NHIF membership	51 (13)	55 (14)	72 (18)	109 (28)	108 (27)	39.87[a]	0.000
NHIF has provided ways for people to raise their complains	89 (23)	49 (20)	105 (27)	69 (17)	53 (13)	19.65[a]	0.001
NHIF always responds to public complaints	73 (18)	53 (13)	162 (41)	65 (16)	42 (11)	116.03[a]	0.000
I am able to track down any complain given to NHIF	91 (23)	85 (22)	147 (37)	35 (9)	37 (9)	107.65[a]	0.000

This information was further simplified by recoding the variables from five Likert scale to two variables of whether NHIF is accountable to the citizens or not. The results are indicated in Figure 5.

Majority 272 (69%) of the respondents were of the opinion that NHIF is not accountable to them. The reason would have been that the citizens were not aware of how they can be involved in NHIF's decision making process, the respondents were also not aware of what NHIF buys with their monthly contributions, neither were they aware on any public reporting mechanisms available for NHIF to report on the use of funds.

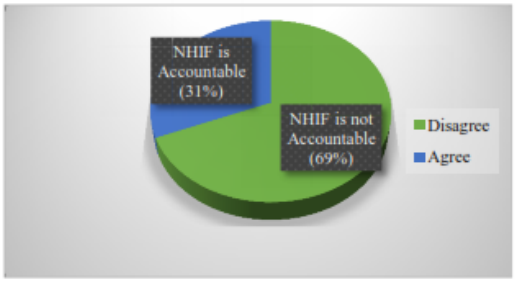

Figure 5: Citizens enforcing NHIF accountability.

Citizens' choice of health provider under National Scheme

Perception of the respondents was also sought on whether NHIF communicates to the citizens on the rules of selecting health care facilities, and whether citizens understand these rules. In addition respondents were asked if they selected the NHIF contracted/outpatient facilities at their own free will. Most respondents 257 (65%) agreed that NHIF communicates to them the rules of selecting a health facility and that they 256 (64%) understand these rules. Majority 369 (94%) also agreed to have chosen the health facility at their free will. Majority 210 (53%) agreed that a person cannot choose more than one health facility under NHIF, this confirmed that they knew the rules of selecting health facility. Majority 235 (59%) confirmed that NHIF provides adequate number of health facility for the patient to choose from and majority 201 (51%) also indicated that they have never changed their outpatient facility under NHIF.

Hypothesis testing of citizens responses

Chi-square measure of association

The Chi-square statistic was used to establish whether there was a relationship between each independent variable and the dependent variable. The data recoded from Likert scale to binary variables was used to test the independence of the variables. The results are presented Table 2.

The results indicate that NHIF communication to the citizens, determining citizens' views, and values, NHIF accountability to the citizens and Citizens' choice of primary providers were significantly associated with access to primary care health in the two counties of study. The results were significant at $p<0.05$.

Table 2: Relationship between citizen engagement factors access to PCHS in NHIF National scheme.

Variable	Sample Size (n)	χ^2	Df	P-value
NHIF benefits	395	1.50	1	0.221
NHIF communication	395	33.31	1	0.001
Citizen views and values	395	22.65	1	0.001
NHIF accountability to citizens	395	24.71	1	0.001
Citizens choice of health provider	395	40.79	1	0.001

Bivariate analysis of citizens variables

Holding other factors constant, a bivariate analysis was carried out to determine the effect of each independent variable on the dependent variable, assuming there was no interaction between the independent variables. The results are presented in Table 3.

Table 3 shows that citizen engagement factors had a significant relationship with access to primary care health services under NHIF national scheme. The study found that NHIF communication with citizens ($p<0.001$), citizen views and values ($p<0.001$), NHIF accountability to citizens ($p<0.001$) and Citizens choice of primary care provider ($p<0.001$), all had a p value less than 0.05 level of significance and therefore there was a significant association of each of the independent variables with access to primary care health services, in the two counties. Indeed, where there was NHIF communication patients were 3.762 times more likely to access primary care health services than where there was no communication. Where citizens' views and values were taken into account patients were 4.225 times more likely to access primary care health services than where their views and values were not taken into account. Where citizens viewed NHIF to be accountable patients were 4.316 times more likely to access primary care health services than where they viewed NHIF not to be accountable. Where citizens understood the rules for selecting a primary care provider, patients were 4.349 times more likely to access primary care health services than where there the patients did not know the rules.

Multivariate analysis

Logistic regression was performed to determine the effects of NHIF benefits, NHIF communication, citizen views and values, NHIF accountability, provider choice on the likelihood that a citizen will have access to primary care. Hosmer and Lemeshow Goodness-of-fit test (GOF) was used to decide whether the study model was correctly specified. The results indicate that the logistic regression model was statistically significant, χ^2 (6)=5.412, p>0.05. If a GOF result is a p-value below 0.05, you fail to accept the prediction model, and vice versa, if the GOF results p value is higher than 0.05, the regression model passes the test. The regression model explained 23% (Nagelkerke) of the variations of access to primary care health services and correctly classified 74% of those who had access. Results of the odds ratio and the levels of significance are presented in Table 3. Result with a p value of less than 0.05 were interpreted to be significant.

Table 3: Bivariate analysis of citizens' engagement variables.

Variable	B	SE	Odds ratio	P value	R^2
NHIF benefits					
Citizens don't know of benefit (ref)	0.486	0.400	1.000	0.225	0.005
Citizens know benefits			1.626		
NHIF communication with citizens					
Citizen disagree on communication (ref)	1.325	0.236	1.000	0.001	0.116
Citizen agree on communication			3.762		
Citizen views and values					
NHIF does not takes into account (ref)	1.441	0.320	1.000	0.001	0.090
NHIFs take into account			4.225		
NHIF accountability to citizens					
NHIF is not accountable (ref)	1.462	0.311	1.000	0.001	0.097
NHIF is accountable			4.316		
Citizens choice of primary care provider					
Citizens don't know rules (ref)	1.470	0.238	1.000	0.001	0.136
Citizens know rules			4.349		

Significance- p<0.05; sample size=395.

From these results communication (p=0.001), accountability (p=0.045) and provider choice (p=0.001) added significantly to the regression model. The variables in the equation table can be used to predict the probability of an event occurring based on a one unit change in an independent variable when all other independent variables are kept constant.

Table 4: Multivariate analysis of citizens' engagement variable.

Variable	B	SE	Odds ratio	P value
NHIF benefits				
Citizens don't Know of benefit (ref)	-0.007	0.443	1.000	0.987
Citizens know benefits			0.993	
NHIF communication with citizens				
Citizen disagree on communication (ref)	0.858	0.266	1.000	0.001
Citizen agree on communication			2.358	
Citizen views and values				
NHIF does not takes into account (ref)	0.384	0.385	1.000	0.319
NHIFs take into account			1.468	
NHIF accountability to citizens				
NHIF is not accountable (ref)	0.729	0.363	1.000	0.045
NHIF is accountable			2.073	
Citizens choice of primary care provider				
Citizens don't know rules (ref)	1.095	0.254	1.000	0.001
Citizens know rules			2.990	

Significance- p<0.05; sample size=395; R^2=0.228.

The results showed a 2.358 fold increase in the odds of accessing primary care services among those who received communication than those who did not. The results also showed a 2.073 fold increase in the odds of

accessing primary care services for patients who perceived NHIF to be accountable than those who did not. A 2.990 fold increase in the odds of accessing primary care health services among patients who understood the rules of selecting a facility, than those who did not was observed in this study. The study results indicate that knowledge of NHIF primary care benefits package (p=0.987) and citizens views and values (p=0.319) did not contribute significantly to the model.

DISCUSSION

Access to primary care health services should be guaranteed for every member of the social health insurance. However not all respondents perceived the services to be accessible, as some cited that drugs were not available and that patients were being charged for services at point of access despite prepayment for the primary care services. Similar findings were found in a study on challenges of strategic purchasing of healthcare services in Iran Health Insurance Organization, where participants perceived issues affecting strategic purchasing to be lack of accessibility, affordability and availability of services.[1] One of the incentives for providers under capitation payment is to underprovide services in order to maximize profits.[7] Furthermore in a research on social insurance uptake in Nyeri County, it was established that patients who had ceased being enrollees of NHIF were willing to rejoin the scheme if they would be guaranteed availability of drugs and if the quality of care would be improved.[8] Some of the respondents in this study cited bad staff attitude as one of the reasons for dissatisfaction with the social health insurance.

Respondents were asked questions to determine their knowledge of the benefit package. Majority were aware of the components of the benefit package under study however the results indicate low knowledge on entitlement in three areas these were entitlement to management of uncompleted STIs, ongoing support, health education and counselling and minor surgical procedures under local anesthesia. Citizens' pooled contributions of a social health insurance system are used to purchase a set of health benefits or interventions, which the insured members are all entitled to.[9] The authors stated that often the beneficiaries are not aware of their entitlement and patients always rely on the health care provider to establish the kind of services they should receive, as they recognize the health care provider to be better informed to make such an establishment. Knowledge of benefit package seem not to be associated with patients accessing health services, this is because, patients knowledge of their entitlement does not guarantee access to health services, as the actual access to the services is also influenced by other factors such as the actual encounter with the health provider.[8]

Effective and efficient communication is crucial in healthcare management. poor communication from NHIF may inhibit clients' understanding on services covered by NHIF, or inhibit knowledge of requirements for coverage of their dependents or how the primary provider system worked under the outpatient capitation scheme.[10] Key strategic purchasing actions in relation to citizens or population served include informing the population of their entitlements and obligations, this may be implied to have taken place as majority of the respondents confirmed to have received information from NHIF despite saying that it was not regular.[11] NHIF communication to citizens is through published detailed information on the NHIF website and advertisements widely in the media, however NHIF's use of its website, newspapers and media pronouncements to inform the populace of its service entitlements limits the reach of its messages to those who had access to these media, and this may explain the 43% respondents who indicated NHIF does not communicate to them.[2] NHIF communication strategies must address context specific issues and dynamics. Progress toward UHC requires local ownership and tailored made strategies for particular settings. Each audience requires tailored communication approaches to change their knowledge, attitudes, and behaviors. These actions may engage stakeholders in information sharing, conversation, and/or shared learning, with the aim of making decisions or influencing behavior changes.[12]

Perception on whether citizen's views and values are taken into account by NHIF the purchaser was established in this study. The results of this study are also in agreement with another study that indicated that with indicated that though importance of population needs assessment is highly recognized, this function is not often carried out and where it exists, results are often not included into purchasing decisions.[3] NHIF Act doesn't have provision for eliciting feedback form citizens, and although, NHIF has a phone line which is free for the public to call, this line is operated for 24 hours a day, any attempts to call the number by the authors, during the study period was not successful.[2] This may hinder feedback to NHIF and further improvement of services. No formal needs assessment activities were undertaken in designing NHIF benefit package, in fact, NHIF used a variety of means to determine health needs of the population and inform the design of the benefit package, including customer satisfaction surveys; feedback received from board members and analysis of claims data, these authors recognized that citizen engagement required improvement.[2] There is need for inclusion of citizens' preferences in designing the benefit package.[9] A study in Nyeri County on uptake of social insurance cited that (104) participants in the study had never been invited to Social Health Insurance and Community Health Insurance meetings, this meant their views and values were not often sought by the insurance scheme.[8]

The study results indicate that NHIF the purchaser was perceived as not being accountable by the citizens since they lack means of reporting on use of funds and

complain mechanisms by NHIF were not known by the respondents, the respondents were also not aware on how they were represented in NHIF board. Many European countries, consumers have a formal representation in purchaser organizations, though there challenges in determining which is the best group to represent consumers in purchasers' boards.[13] One of the accountability mechanisms is public reporting by the purchaser on its use of funds.[9] Lack of sufficient transparency in financial resources is a major challenge in strategic purchasing.[1] Further, a study in China established that though accountability mechanisms, such as reporting and complaints systems have been established some mechanisms do not function effectively and further improvement is required if members' needs and preferences are to be met.[13] The authors also established that in the Philippines, systems to allow members to articulate preferences, needs and complaints are not well established. NHIF Act does not provide for feedback or complaints mechanisms for beneficiaries or members, however the board of directors is composed of key stakeholders including labor unions who represent the citizens.[2] Furthermore, NHIF has no public forum for reporting performance. While there was evidence that these feedback mechanisms did work, for example resulting in the redesign of the enrolment form, it was unclear what processes were in place to regularly incorporate this feedback in benefit package design and other aspects of purchasing performance. Though changes to the benefit package and premium rates were based on member feedback, the process of implementation of these changes is met with stiff opposition from labor unions and the general population. One of the ways to enhance the role of consumers in purchasing and to hold the purchaser accountable is to specify the consumers' and purchasers' roles.[13] These authors also indicate that one way to hold the purchaser accountable and be responsive to consumers is through putting in place complain and feedback mechanisms, so as to influence the purchasers decisions. There was a gap in the area of complaint mechanisms as most respondent indicated that they were not aware of any complain mechanism in place, neither were they aware if NHIF responds to public complains. Most National health systems have put in place complaint mechanisms however, there lacks legally enforceable enforcements in most of them, thus reducing the scope for consumers to declare whether provision or non-provision of health services is appropriate.[14] The results on NHIF accountability establishes an existing gap in accountability.

Citizens in this study understood the rules of selecting their primary care health services provider. When consumers have a number of health facilities to choose from, it may increase responsiveness.[1] A major concern was also noted among respondents who indicated that they did not know the rules of selecting a primary provider. These are respondents who indicated that they can choose more than one primary care provider. The reason for inadequate knowledge of provider choice may be as a result of predisposition of their education background or socio-economics status. Evidence show that choice of a health provider tends to benefit the higher (and usually better-informed) social classes and thus may lead to increasing health inequalities, policy response should focus efforts to ensure wider access to information and to support choice among the underprivileged.[13] NHIF publishes information about providers and the benefit package through its website and through advertisement on media, this are ways through which NHIF creates and promotes awareness of the citizen entitlements and accredited providers.[2,15] There are a few respondent who indicated that they did not chose the facilities they were access primary services from, the question remains who chose for them these facilities?. Social Health Insurance (SHI) patients terminated their enrolment with SHI after finding they were allocated facilities they never chose.[8]

CONCLUSION

Results indicate that the citizens are not fully engaged by the social health insurer. Despite majority indicating that they knew the primary care benefits and entitlements, entitlement to treatment of uncomplicated STIs and minor surgery under local anaesthesia scored low. Information and communication from NHIF was inadequate, indeed information on NHIF services was cited to emanate from friends and relatives. Citizens' views and values are not fully determined, neither are citizens engaged in determining their own needs. Citizens also felt that NHIF is not accountable to the public. Rules of selecting facilities were not known by all respondents as some indicated that they can choose more than one primary care provider. Services were not guaranteed thus limiting access, this was occasioned by medicines not always being available and sometimes the patients were asked to pay for services. Patients indicated not having trust with the system as providers often mention that NHIF pays them too little capitation, and therefore the patient must pay for some basic services including those covered under NHIF National Scheme. Instances of patients taking home inadequate prescriptions were a common phenomenon. Patients don't know their rights as it was seen that they were satisfied with taking home a written prescription as what mattered to some was the presence of a consultant regardless of whether drugs were there or not. Though all the variables seemed to influence access in a binary relationship, in a combined relationship, communication with citizens, NHIF accountability to citizens and choice of provider were seen to influence access of patients to primary care health services.

Recommendations

NHIF should leverage on the existing government administrative mechanisms to relay information to the citizenly for example use of chief barasas, as informal channels of communication since more people relate and understand them better including churches. NHIF should

visit health care providers, to meet with the patients and ask them on their experience with the health services. In addition, NHIF should visit the community to establish public needs and preference through public forums that must be organised and the public informed on the same. Furthermore NHIF should establish means of eliciting citizens' feedback, complain mechanisms and also act on these complains when raised. Finally, the citizens need to be trained more on how to select a facility and to be informed on how the capitation system works.

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Role of County Health Governance in Implementation of Social Insurance National Scheme in Selected Counties in Kenya

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Abstract

Health care financing (HCF) is one of the building blocks of a health system. Kenya envisions to have Universal Health Coverage (UHC) by 2022. To achieve this, the National Hospital Insurance Fund (NHIF) was identified as a vehicle towards the realization of UHC. NHIF collects revenue, pools risks, and purchases health services for its members. NHIF uses capitation as a strategic purchasing model to provide primary care health services (PCHS). This study aimed to establish the role of County Health Governance in implementation of the NHIF national scheme. Specifically, the study sought information on NHIF's communication with the County Health Management Team (CHMT), CHMT knowledge of NHIF national scheme guidelines, suitability of county health facility Infrastructure , adequacy of NHIF capitation funds, NHIF accountability and how they all influence provision of NHIF primary care health services. This was a cross sectional research. All 120 County and Sub-County Health Management Team members were purposively sampled from Nakuru and Nyandarua Counties, a 96% (115) response rate was achieved. Results showed that, 64(56%) of respondent said NHIF was accountable to the population, 73(63%) said the county health facility infrastructure was adequate and 67(58%) said there were guidelines directing implementation of NHIF PCHS. However, 66(57%) said patients were not accessing NHIF primary care health services, 70(61%) said capitation funds were not adequate and 59(51%) said communication from NHIF to them was inadequate. Chi square results indicated that all variables, NHIF communication $\chi^2 = 5.364$, $p < 0.05$, availability of guidelines $\chi^2 = 10.447$, $p < 0.05$, suitability of county health facility infrastructure $\chi^2 = 13.199$, $p < 0.001$, adequacy of NHIF capitation funds $\chi^2 = 6.956$, $p < 0.05$ and NHIF accountability $\chi^2 = 10.982$, $p < 0.05$ were scientifically significant and influenced implementation of the national scheme outpatient services. The study concludes that there is minimal participation of the CHMT in NHIF decision making and this hinders successful implementation of the NHIF National scheme. The study recommends that 1) NHIF improves communication with the CHMT members, so as to involve them in the implementation of NHIF national scheme, 2) NHIF to raise awareness of the strategic purchasing function in order to promote a shared understanding which will enrich knowledge of the roles and responsibilities of all the players including the County and National governments, NHIF, Citizens and providers.

Key Words: *Universal Health Coverage; Social insurance; NHIF National Scheme; County Health Management, Kenya*

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