



ASSESSING INFLUENCE OF MANAGEMENT FUNCTIONS ON PROVISION OF HEALTHCARE SERVICES IN DEVOLVED SYSTEMS: A CASE OF MERU COUNTY GOVERNMENT, KENYA

ANTHONY MWENDA MURUNGI

CO-AUTHOR: SAMUEL NYAMBEGA NYANGAU

ABSTRACT

Healthcare is a fundamental requirement for every human being. However, countries especially in the third world have been facing many challenges pertaining to health. Lack of funds, unpreparedness, shortage of healthcare specialists, poor policy formulation, over-dependence on foreign aid, and corruption, are just but a few of the myriad of challenges facing global health. In Kenya, even with devolution, the health sector still faces challenges such as workers' strikes and incapacity to give specialized care. This research project sought to discuss management functions influencing the delivery of healthcare services in the decentralized structures, focusing on Meru County, Igembe South Sub County. This research was directed by these objectives: To establish how funding influence the provision of healthcare services in Meru County; To establish how medical staffing influence the delivery of health services within Meru County; To establish how referral management influence healthcare provision in Meru County and to establish how procurement of medical equipment influence the provision of healthcare services in Meru County. The study focused on county health facilities and the respondents were both medical personnel and the public. The study used descriptive research design with a target population of 796. Stratified random sampling was used in choosing 159 respondents within the research area, which represents 20% of the target population. Data collection was through open and close ended questionnaires. Statistical Packages for Social Sciences (SPSS) was employed for analysis of qualitative data. From the research findings, most health centers in Meru county had long queues where patients had to wait for long periods of time before being treated. The existing referral policies were not adhered to due to lack of essential medical equipment at the lower-level health facilities. This had resulted in overcrowding at the sub county level hospitals which were designed to tackle more complex cases. Many people felt that the health sector at the county level was not well funded and that there was need for more budget allocation. Most respondents stated that procurement of medical equipment did not follow the right procedures and standards but was instead marked by corruption and lack of accountability.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The following chapter introduces the background; it highlights the statement of the problem, objectives, significance, scope, limitations and assumptions.

1.1 Background of the Study

Healthcare provision is a crucial human requirement for general development. The Sustainable Development Goals (SDGs) ascertain that the entire globe is committed to the provision of a Universal Health Coverage which encompasses quality healthcare to all people by the year 2030. Such that every single human being, regardless of background, ought to be able to access healthcare of an excellent standard which they need—promotive, preventive, curative, rehabilitative, or palliative—without having to go through any financial difficulties whatsoever (World Health Organization, 2018). The World Health Organization (WHO) further brings out three other objectives in a bid to achieve Universal Health Coverage (UHC): Firstly, equity in provision of healthcare services such that whoever wants to access the same is allowed regardless of their financial ability; secondly, the quality of healthcare services being provided ought to be able to better the health of the recipients; lastly, shielding against monetary dangers that may accrue and that focuses on making sure health cost does not place a financial burden on the people using it. The World Health Organization highlights four basic elements that are fundamental in the achievement of UHC: i) a health system that is well established, well organized and with proper management ii) a structure that caters for the financial needs of the health system iii) being able to acquire requisite drugs and technology iv) adequate and health personnel (World Health Organization, 2010).

However, despite relentless efforts by the WHO in the achievement of UHC, healthcare provision continues to face its share of bountiful challenges all across the globe. A research done by the Committee on the Health Professions Education in the USA, revealed that there is no guarantee that any person will receive quality healthcare for any health problem. In a statement by the Institute of Medicine (2000), the number of Americans dying annually due to medical associated mistakes was more than those who die as a result of road accidents. A research done by Osborn *et al* (2014) among the older generation in 11 countries found that the elderly in USA tend to be sicker when compared other nations and are more likely to have trouble settling their hospital fees and accessing the healthcare they need. Osborn, in his report, further noted that the elderly were also reported to be having trouble accessing healthcare in a timely manner and using emergency services. About 54% of people in the United States have access to private insurance, around 29% have public insurance while 16 percent do not have any insurance whatsoever, this amounts to almost 50 million people (out of which are 8 million children), without healthcare insurance (United States Census Bureau, 2010).

In countries with little resources, such as Cambodia, health expenditure per capita is less than US\$ 100 which has led to an inefficient healthcare system (World Health Organization, 2019). This is caused by the fact that not so much has

been invested in basic health services, poor remuneration of staff in the public health sector and the absence of clear guidelines in service delivery and funding (World Health Organization, 2019). These countries heavily rely on foreign donations for the health sector. According to WHO, another contributor to inefficiency is the absence of control and supervision of the health sector, cutting across both public and private institutions and the misbalancing of incentives for providers. Hospitals take advantage of this and instigate demand in order to reap big in terms of income by prescribing medication to patients in greater quantity than necessary and use too much of the expensive technology, while at the same time basic health providers are faced with challenges such as lack of amenities, drugs and a workforce that possess the necessary skills, hence are unable to meet the needs and expectations of patients.

In Africa, challenges in healthcare provision relate to governance, healthcare staff, medical products, availability of funds and general service delivery. Africa lacks workable health-related legislations. Shortages of health staff is highest in Africa (Kirigia & Barry, 2008). This is mainly caused by inequality when distributing workers and the fact that most health workers in Africa migrate to foreign continents in search of better paying jobs. Most African countries have very little investment in healthcare leading to a situation where 47% of people in Africa are not able to access quality healthcare. In 2005, 58.03 million people died worldwide, of which 10.9 million traced their origin from Africa. This translates to 18.8%. In countries like Zimbabwe, patients are given painkillers as a “treat-all drug”. Around 80% of the African population, rely on public health facilities (Africa Renewal, 2017). These public health providers suffer acute shortage of medicine, causing a large number of people to succumb to easily-treatable diseases.

Kenya devolved the health sector in 2013 in a bid to provide better healthcare to its citizens. This came with, among others, the Health Insurance Subsidy Program (HISP) that was initiated by the Government of Kenya in the month of April 2014. The situation however remains challenging with majority of the population not able to access affordable healthcare (World Bank & WHO, 2017). Meru County, continues to face challenges in the health sector, such as, delayed funding, lack of sufficient healthcare workforce and the absence of a fully functional and efficient referral system.

1.2 Statement of the Problem

Devolution is seen as a structure that brings the national government to the grassroots, making it easily accessible to the people. This is the same motivator in the devolution of healthcare. However, issues of readiness and capacity to handle health matters at the county level have been matters affecting healthcare provision. The health division at the county level has been plagued with bountiful challenges, from strikes, intimidation of workers, inadequate staff, delayed payment of workers, improper management of funds, and inappropriate methods of conflict resolution to tussles with the national government, which has negatively affected the provision of healthcare services. A report by the Kenya News Agency on the 28th of June 2019, cited how Kirinyaga county health workers had been dispersed inhumanly by the police while conducting a peaceful demonstration against the county administration due to issues such as unpaid wages, understaffing, nonfunctioning medical equipment and medicine that had not been procured. The

workers complained of how the county leadership had refused to dialogue with them. This happened as the county government accused the former of incompetence. As all this was going on, patients had to seek medical care from private hospitals since government facilities did not have medical personnel. On the 8th of July 2019, the Kirinyaga governor fired all the striking health workers terming their strike “illegal”.

Another key issue is policy. There have been blame games between different groups over problems encountered by the health sector at the county level. According to a report by the Standard newspaper on the 30th of June 2019, KMPDU dismissed the concept of devolved healthcare, demanding that the health sector be returned to the national government. On the part of the county governments’ leaderships, county governments want to have their own health policies, each county for itself. Kilifi health executive Dr. Omar Anisa as was quoted by the Star newspaper on 25th of June 2019, said that most national health policies do not work well for county governments. “Every county has unique health needs. If we can be allowed to partner with medical training institutions in the counties to come up with courses that suit us then we could increase the number of health workers in our hospitals”. The Council of Governors has lamented over health policies that are overlapping between the two levels of government and the existence of legislative barriers that stand in the way of implementing these policies. This has affected provision of healthcare services at the grassroots. In Meru County, despite the County Government allocating the health sector 3.3 billion shillings in the 2019/2020 financial year, cases of frequent strikes by healthcare personnel citing unpaid wages and failure by the county government to honor a CBA were still reported. A report by KTN Kenya entitled “Cancer Village” reveals how an entire village in Meru County has been ravaged by cases of cancer which are beyond the County’s healthcare system’s ability to handle. Majority of these patients who get to learn of their condition at a very late stage are referred to Kenyatta national hospital for treatment since the County health system lacks the appropriate equipment for diagnosis and treatment.

In this regard, this research aimed at assessing the management functions influencing the provision of healthcare in the decentralized systems in Kenya, focusing on Meru County.

1.3 Purpose of the Study.

The study sought to assess the management functions influencing the provision of healthcare services in the devolved systems in Kenya, a case study of Meru County Government.

1.4 General Objectives

- i) To establish how medical staffing influence the provision of healthcare services in Meru County.
- ii) To examine how hospital referral management influence the provision of healthcare services in Meru County.
- iii) To determine how funding influence the provision of healthcare services in Meru County.
- iv) To establish how procurement of medical equipment influence the provision of healthcare services in Meru County

1.5 Research Questions

- i) What is the influence of medical staffing on the provision of healthcare services in Meru County?
- ii) How does referral management influence provision of healthcare services in Meru County?
- iii) How does funding influence the provision of healthcare services in Meru County?
- iv) How does procurement of medical equipment influence the provision of healthcare services in Meru County?

1.6 Significance of the Study

This research project will be of much importance to various groups, which include academicians and researchers, county governments the national government and policy makers.

The national government could use the data in this research to understand the effectiveness of funding at the local level and make amends where necessary. Since healthcare is such an important aspects of a county's development, policy makers would use this research to see the utilization of funds, among others and come up with policies that would make the health sector as effective as possible.

This study gives recommendations that can be used by healthcare providers in order to improve service delivery through enough budgetary allocation and effective policy formulation. The opinion acquired from the general public on matters devolution and health will come in handy to both the county and national government.

1.7 Scope of the Study

The research was only centered on management functions impacting the provision of healthcare services in the devolved systems. The first chapter was centered on the background, problem statement, objectives and purpose of the study. The second chapter handled literature review, sighting past studies which have been conducted on the same. It also covered theoretical and conceptual framework. The third chapter focused on study locale, selected populace, sample size, validity and reliability and ethical considerations. The study focused on Meru county health facilities. Respondents were Pharmacists, clinicians, Nurses, medical officers, procurement officers, Hospital administrators and the general public.

1.8 Limitations of the Study

The study had the following limitation:

1. Travelling costs were quite high since Meru County is big geographically.
2. Another limitation was time because data collection and analysis were done within a short time period.
3. The study adopted on descriptive research, which mainly depends on the response of from respondents who sometimes give incorrect information. However, the researcher used comprehensive tools to capture information that is as elaborate and accurate as possible.

1.9 Delimitations of the study

Delimitations of the study include:

1. The research focused on the influence of management functions on provision of healthcare services within Meru County.
2. Inasmuch as there may be other factors affecting provision of healthcare, the study concentrated on funding, referral management staffing and procurement of medical equipment.

1.10 Assumptions of the Study

The study presupposed that participants would be accessible and that they would give genuine feedback. Another assumption is that examinees had clear mastery of the enactment of devolution of healthcare in Meru County.

1.11 Operational Definition of Terms

Health infrastructure: This entails buildings, equipment, and communication and ambulance services.

Health care services: The provision of medical services, nursing, hospital services *et al* as well as providing health services with the intention of prevention, avoiding, curing or getting rid of human diseases and ailments. It may also include psychological care.

Health care work force: These are individuals whose primary goal is to provide healthcare services. They include doctors, nurses, community health workers etc.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter illustrates the connection linking independent and dependent variables. It presents a literature review indicating past studies in various fields which justify the connection joining these variables. This chapter also includes a conceptual and theoretical framework.

2.1 Empirical Literature

2.1.1 Healthcare Staffing and Provision of Healthcare Services

Delivery of public health able to meet international standards requires skilled health staff who are adequately supported. According to WHO, Human Resources for Health (HRH) is a phrase used to allude to all persons who get themselves involved in undertakings whose basic aim is to improve healthcare provision (World Health Organization, 2009). They include those directly involved in rendering health services to patients such as doctors and nurses and other staff such cleaners who deliver services indirectly and are very important for proper functioning of the health sector (Ministry of Health, 2013).

Many studies have been conducted and have shown that lower staffing levels in health facilities is likely to negatively influence the provision of health care services.

A research by Lopes *et al*, (2015) in the USA disclosed the greatest hindrance to attaining the goals within the SDGs (formerly Millennium Development Goals) is healthcare human resource planning. This is because in order to deliver quality healthcare services in a cost effective manner, effective deployment of personnel is paramount, failure to which may cause excess or scarcity of staff. Shortage of staff can lead to lower standards healthcare provision due to the lack of enough resources which are required to provide the requisite services (The World Health Report, 2006). Whenever there is too much work, doctors and nurses suffer from lack of sleep, hence risking the safety and wellbeing of patients. It also causes long waiting lists and queues due to few medical personnel hence leading to preventable death of patients (Williamson, 2000). Data from the Bureau of Health Professionals revealed an acute scarcity of nurses to be over 400,000 as of 2004 in the United States alone. The American Association of Retired Persons, (2010) calculated a figure of 116,000 vacant positions for registered nurses in the United States and 100,000 vacancies in Convalescent homes as at 2009. There was an anticipation that this shortage would exacerbate as 78 million people would begin attaining the retirement age in 2011 and hence a higher risk of long-term ailments related to old age (United States Census Bureau, 2010). By 2020 there is an expected scarcity of up to a quarter of a million medical practitioners. This situation is expected to be dire for Americans living in rural areas which experience higher levels of health workforce shortages.

Beaglehole *et al* (2003) carried out a study of personnel working in the public health within the Sub Saharan part of Africa. It was noted that there is an overall disregard for the public health workers and infrastructure therein. Being an important entity of the health sector, there is hardly any understanding concerning the criticalness of healthcare workers especially within Sub Sahara Africa. Most National Health Manpower Plan never puts into consideration the healthcare personnel serving the public.

Similar to most developing countries and Africa, scarcity of healthcare personnel is a common challenge in Kenya, having been singled out by the World Health Organization as being one of the countries with having an acute scarcity of health personnel (World Health Organization, 2006). In the World Health Organization Global Atlas of the Health Workforce (2010), Kenya was among the 49 priority countries that were facing a scarcity of health personnel. As stated by the World Health Organization, a population of 10,000 should have 23 health practitioners in order to provide “essential child and maternal health services”. However, Kenya still stands at 13 healthcare workers per a population of 10,000 (less than 50%) of WHO benchmark. According to KPMG, rural areas experience even a worse shortage of up to 80% in local health facilities (KPMG Africa, 2014).

There is a huge gap within counties in terms of health resources allocation, where certain counties are better placed as compared to others (Kimathi, 2017). The constitution of Kenya clearly outlines that County governments under the County public service boards have the duty of recruiting staff, which is done in accordance with a substructure of invariable national standards (Constitution of Kenya, 2010, Article 235). This has however been a challenge to most county governments due to underfunding by the national government.

A county government’s ability to meet the growing needs of its people is greatly determined by the number of healthcare workforce available. Doctor-patient ratio spans from 0:10,000 in marginalized areas to 2:10,000 in other regions (Kimathi, 2017). This is below the national standard according to the Ministry of Health (2013).

Frequent unrests in many counties by healthcare workers have been highly attributed to understaffing. “The period between January and August of 2015, witnessed cases of strikes by health staff in more than twenty-two counties, with insufficient personnel being among the key reasons” (Kimathi, 2017). In his 2017 article, Kimathi further noted that the problem of insufficient personnel is brought about by the fact that many workers move out in search of greener pastures, improper standards in the placement of workers, corruption and inadequate financing of the health sector (p. 59).

The challenge plaguing medical staffing gets even uglier when divided into expertise. The health sector has a serious scarcity of specialists which was worsened at the inception of county governments and the challenges that arose. According to Magokha (2015) Kenya loses up to 40% of medical graduates who desert the country for better jobs abroad. Majority of health specialists are only found in major national and county hospitals but leaving out the lower level health centers, whereas up to 68% of the population uses the latter (Kimathi,2017, p.60). This puts the health sector and the general public at large in such a desperate situation, keeping in mind the criticalness of health to man’s wellbeing.

This is very alarming. Miseda (2017) noted that there is a desperate need for health experts specialists all across the 47 counties and focus should be on cardio-surgeons, oncologists, forensic nurses, just to mention but a few.

2.1.2 Referral Management and Provision of Healthcare Services

A referral is basically an all-round health provision system designed to provide health services through passing on patients from the starting health center to a higher level unit that can provide superior services that are required (Ministry of Health, 2014).

A study conducted by Macintyre & Littrell (2011), on Swaziland's referral system, revealed the absence of a clear protocol within the referral system, where clients seek care wherever they can. This leads to congestions within referral hospitals as practitioners endeavor to serve both referred and self-referred patients. This is contrary to the hospital tier system whereby self-referred clients ought to receive services at the first level. The absence of protocol means that there are no clear guidelines governing communication between the different levels of healthcare (p.16). Referred patients many times have to wait in line, complete registration, and are evaluated again as if to begin the entire process afresh which leads to congestion. The referral system in Swaziland, Macintyre (2011) further noted inadequate infrastructure as a barrier. The lack of basic services in first level hospitals often causes patients to be referred, which is often frustrating since patients will face challenges such as long queues and are sometimes turned back without being served.

Amoah & Phillips, (2017) carried out a study on referral management in Ghana. In their findings, despite Ghana being reputed as having one of the most excellent healthcare structures in sub-Sahara Africa, its referral system is wanting. The formal requirements for referral entails a client accessing a lower level health system and then they are referred when there is need (World Health Organization, 2017). However, in Ghana, majority of patients ignore these policies (MoH Ghana, 2012). A study conducted by Nanyonjo (2015) asserted that lack of necessary information on referral policies and the fact that many people are unable to understand the differences that exist within the various levels of healthcare weakens the referral system. Amoah *et al* (2017) noted that it is upon patients and those people taking care of them at the home level to ensure that such policies are followed.

The Kenya Health Policy (KHP) 2012–2030 aims at providing leadership toward the achievement of high standards of health that focuses on universal health coverage for the entire country (Ministry of Health, 2013). The strategic objectives of the policy include providing affordable, equitable, accessible, and responsive healthcare.

Organization of Kenya's healthcare delivery is across six cadres starting from the local level, through primary care which comprises of dispensaries (2nd level), health centers (3rd level), county referral hospitals (4th& 5th levels); national referral hospitals occupy the 6th level (Ministry of Health, 2014).

The referral system in Kenya has been facing many challenges. Kamau *et al* (2017) conducted a research on challenges facing the referral system in Kenya. The study indicated that majority of health centers lack transport facilities for

patient referral. Majority of the healthcare workforce are not trained on referral guidelines; majority of health centers lack normalized documents for referrals.

Underfunding has hampered their ability to care for an ever-increasing number of patients (Chuma & Okung'u, 2011). Referral hospitals in Kenya have also been facing the challenge of non-compliance to national and international referral recommendation. The lack of specialists and the necessary facilities to give specialized care to patients has also been a great challenge.

2.1.3 Funding and Healthcare Provision

Funding or fiscal devolution is the shifting of expenditure functions from the national to the local government level (World Bank, 2008). The World Health Organization (2017) defined it as the shifting of duties pertaining to financial strategies from the national to the grassroots. The main driver for devolved funding is in order to increase economic productivity.

The importance of investing in healthcare cannot be underestimated since it is a critical investment for the wider economy, (World Economic Forum, 2015). Failure to this hinders job prospects, hence, general productivity. Funding of the health sector has proved to be a considerable challenge even to first world countries, (World Health Organization, 2017). A study by Kumar (2011) on the state of healthcare in India revealed that the country had one of the highest rates of out-of-pocket expenses in the world due to the fact that little has been invested in the health sector to cater for individual needs whereby people encounter situations where they are receiving healthcare services that are indirectly proportional to what they pay for. India spends around \$215 in healthcare investment per person, which is very low and majority of this is made directly by individuals at the time they are seeking healthcare services, (World Economic Forum, 2015). This becomes very risky for the public as it can pose a very heavy financial burden on individuals thus leading to poverty.

In South Africa, despite 8.8% of GDP going to healthcare funding, there is still unequal access to healthcare since provision of such services is divided along socioeconomic lines (Health Financing Profile South Africa, 2016). The private sector tends to cater for the middle class and people with high income. HIV/ AIDS, tuberculosis and other non-communicable diseases continue to be an increasing burden for the country.

Obansa (2015) carried out a study on Nigeria's health system. In his study, it was revealed that approximately 15% percent of Nigerian children die before attaining the age of five. The leading causes of death being malaria, malnutrition and diarrhea. There has been an increase in poverty levels with some of the worst cases being linked to "health indicators", (Obansa, 2015). Despite its huge GDP, coupled with foreign aid on the health sector, Nigeria still experiences inadequate health facilities, poor remuneration of workers, lack of sustainable healthcare funding, a lot of spending by the public when seeking health services, corruption, shortage of essential drugs and supplies. Most health workers, have moved to other countries in search of better pay leading to a brain drain.

In the 2001 Abuja Declaration in which Kenya was a signatory, African nations vowed to invest 15% or more of their national budget on healthcare (World Health Organization, 2011). Ironically though, Kenyan government has been

investing less than 6% of the national budget on health. In his 2017 research, Kimathi noted the alarming slashing of government funding of health which has eventually fallen below the standards that were set in the Abuja declaration (p. 60). In 2014, the health sector received less than 6% out of the entire national budget. From this analysis the healthcare sector, despite being one of the essential sectors in the country, is underfunded.

The lack of adequate funding in the devolved units in the health sector has led to poor health service delivery and issues such as workers' strikes. According to Olugo (2015) county governments were given less than 30% of the national budget in the 2014/2015 budget. The health sector, however, received less than 5% allocation in most counties. Most of this allocation was used to pay salaries and general improvement of hospitals (Kimathi, 2017). This low fiscal allocation at the county level has negatively impacted the provision of quality healthcare services.

2.1.4 Procurement of Medical Equipment and Provision of Healthcare Services

Procurement is defined as a process that involves obtaining products, amenities, or labor from an outside origin. This is done often through open tenders. It basically entails having to make choices on purchases within circumstances of shortage using accurate data, and makes use of methods such as cost-benefit analysis or cost-utility analysis. Another aspect of procurement is incorporation of technology which involves installing and commissioning of a product or service (Wang, 2009). Procurement procedures are specifications used during the obtaining suitable goods or services within the most suitable value in order to meet organizational requirements (Kovacs, 2004).

Poor procurement practices within the health sector are one of the greatest hindrances to growth of the sector since health service delivery cannot continue without medical equipment. This is characterized by the supply of substandard goods or poor performance of medical technologies. In China, according to a study by Rose-Ackerman (2014), rampant corruption in procurement of both pharmaceutical and medical apparatus has hindered reforms within the health sector. Vian (2002) noted that the rampant corruption existing in the healthcare sector is a challenge of magnitude proportions for all nations but more so in third world countries experiencing economic hardships and limited resources. This greatly undermines the "quality of healthcare" and, therefore, a country's health status. It can cause erroneous therapies, it can also raise the share of income spent on healthcare, making it too high, and the poor are inadequately served. According to one study, high infant mortality rates goes hand in hand with high corruption on countries (Gupta and Davoodi, 2000). In China, acquisition of drugs and medical appliances has to a large extent been affected by corruption. In 2010, 78% of the doctors said that they believed it was impractical for competition to exist between companies dealing with healthcare provision without having to indulge in corrupt practices (Rose-Ackerman (2014). A research by Tan, (2014) with doctors and hospital representatives in China revealed that majority of these staff had in one way or another been approached by companies wanting to do corrupt transactions through bribing. A study conducted by Bouchard (2012) in Uganda, revealed corruption within orthopedic services and industry characterized by inflation of prices related to medical appliances and lesser quality products.

In Africa, majority of the hospitals and research units largely rely on donated equipment. This has proved to be challenging since there are different requirements for these donated equipment. In addition, the use of donated

equipment often triggers challenges due to some context-specific factors. In this context, lack of clear guidelines on procurement of medical equipment has proved to be a serious challenge in Africa. Despite the fact that donated equipment significantly helps in the betterment of healthcare provision. However, at times, issues of quality of this equipment come up thus negatively affecting the whole process. Effectiveness in the procurement of these equipment has a direct relationship with adherence to quality assurance and maintenance of existing standards. In Ghana, based on a study by WHO (2006), the main obstacles to efficiency in procurement of medical equipment are product requirements that are substandard, poor measurement needs, having to wait for long before suppliers fulfil orders, substandard quality assurance and insufficient financing. A study conducted by Biedron (2019) revealed the use of Outdated IT Infrastructure in the procurement process in most countries.

According to a 2017 report from HSSCRC, 94% of healthcare givers use analytics for supply network. Nevertheless, this is not the case in most places since access to the necessary information is not easy due to technological drawbacks. Most healthcare providers continue to rely on manual methods of procurement purchase approval. Within a period of the last 10 years, a lot of studies have revealed that health personnel are using almost half their day looking for information that could be readily available in an automated system within seconds. Such time could be constructively used for caring for patients hence straining the staff and negatively affecting patients.

In Kenya, a performance report of the health sector 2013 and 2014 revealed that many institutions providing healthcare services are struggling from an acute scarcity of essential medicine or having products that are past their shelf life. Health facilities lack the necessary drugs. This speaks of poor and misappropriation of public resources, hence affecting the effective provision of standardized services. Being a key component of administration and supply, procurement is very important in all hospital cadres. A productive procurement makes certain the accessibility of correct drugs in the correct amounts at the correct time and for the correct client and the correct price and at the appropriate standards (World Health Organization, 2007). Country Procurement Assessment Report (CPAR), which was done by a group of Government representatives, World Bank and donors, together with national experts, revealed significant ineffectiveness in the process of procuring health products for the public and made a conclusion that the essence of value for money is not attained. A health sector performance report 2013-2014, revealed that many health facilities in Kenya are struggling as patients meet situations where there is lack of drugs, wastage of medicine and the absence of drugs that are required by patients (Ondingi, 2015). Health centers are expected to always have the necessary commodities.

2.2 Theoretical Framework

The study was guided by three major theories: theory of fiscal decentralization, learning theory and theory of optimal resource allocation

2.2.1 Theory of Fiscal Decentralization

Formulated and advanced by Oates (2006), this theory is based on four principal aspects: Firstly, devolved units are in a better place to craft delivery of services to suit specific needs of the people as compared to a centralized government that tends to deal with issues in general. Secondly, for people and families that do not have a permanent residence, they can always seek a location that best fits their needs and interests hence gaining maximumly from decentralization (Tiebout 1956). Thirdly, as compared to a central form of governance which tends to be a monopoly, devolved units face a lot of competition from their contemporaries and are hence driven to a more effective delivery of services. Lastly, devolution can provide a conducive environment for experimenting new approaches to governance and service delivery.

Through this theory, the researcher argues that devolution of funds brings effectiveness in healthcare service delivery as compared to centralized governments which are conservative. This however, does not mean that fiscal decentralization is an all cure as far as provision of healthcare services is concerned. Financial resources have to be fairly distributed and managed in a transparent manner within the devolved units.

2.2.2 Learning Theory

This is a theory by Argyris and Schon (1978). According to this theory, institutions need to create a culture of learning where people can acquire and share knowledge. This especially happens when they are handling and finding solutions to problems. This theory emphasizes on the need for organizations to enhance a culture of information sharing, learning from past mistakes, encourage continuous learning and allow people to stand against the existing redundant state of affairs.

With respect to this theory, the researcher holds to the argument that devolved units need to create conditions where they can learn from the healthcare needs of the people since each devolved unit tends to have unique needs. They can also make comparisons with other devolved units both locally and internationally to ensure effectiveness in delivery of healthcare services.

2.2.3 Theory of Optimal Resource Allocation

This theory was advanced by Laska, Meisner and Siegel (1972) and it argues that ongoing projects stand on the verge of collapse if resources are not properly allotted. It is required that these resources be allotted in a manner that will ensure completion of projects and reduce possibilities of project failures.

Regarding this theory, the researcher argues that devolved units need to properly allocate both financial and human resources to the health sector to avoid a collapse of the entire health system.

2.3 Conceptual Framework

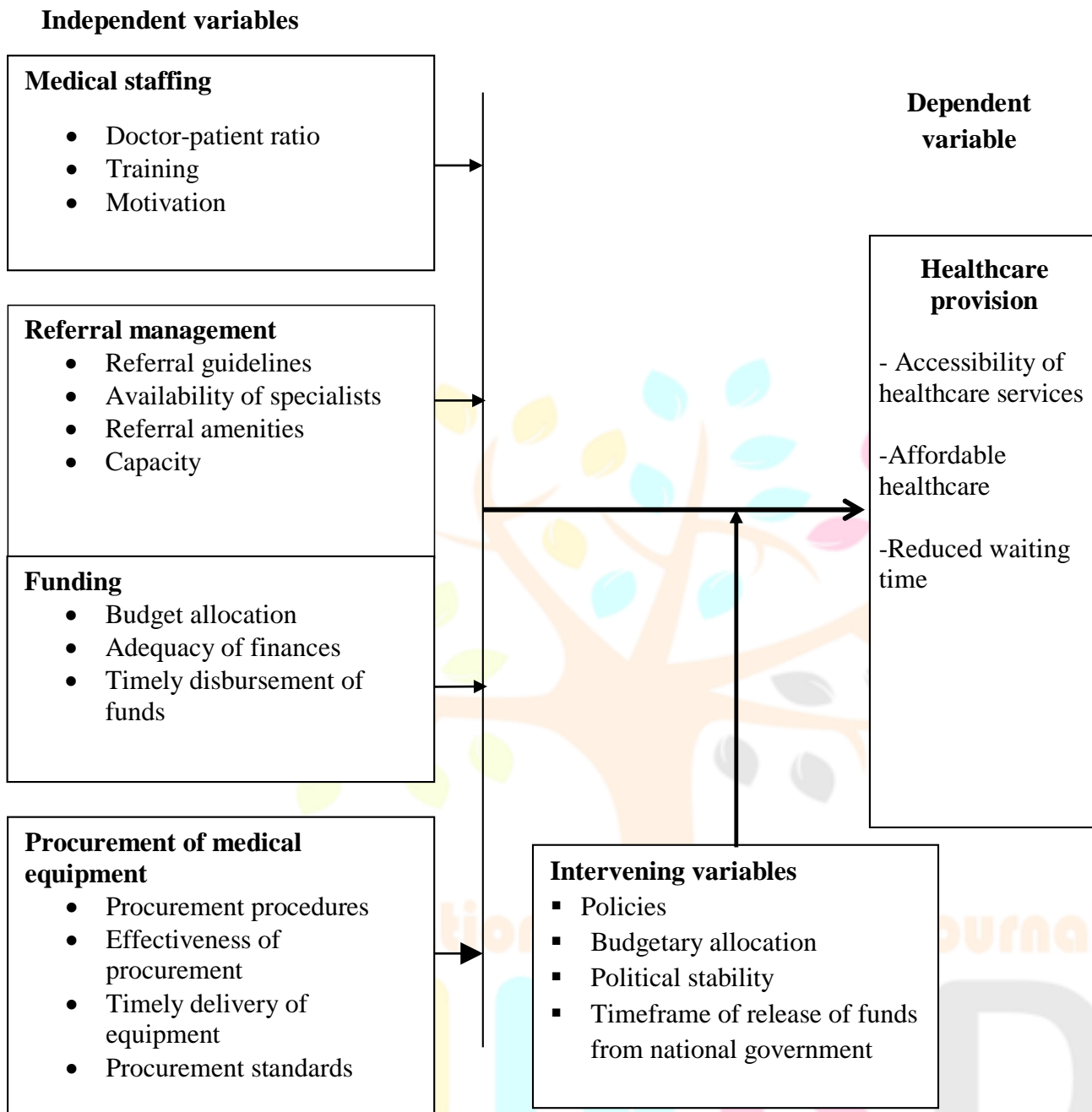


Figure 1 Conceptual framework

Source: Researcher (2021)

2.4 Recap of Literature Review

This chapter analyzed literature and past studies related to the objectives. First and foremost, it analyzed literature that was related to the first objective which was funding, the second objective was staffing, thirdly was referral management, lastly, the fourth objective was procurement of medical apparatus. From the available literature, it is vividly clear that majority of nations, especially in Africa still lack a strong and established health system (World Economic Forum, 2015). Problems such as poor management (Amoah & Phillips, 2017), understaffing (World Health Organization Global Atlas of the Health Workforce, 2010), delayed funding and underfunding of the health sector (Olugo, 2015), the absence of political goodwill, lack of clear guidelines, legislation and corruption. This makes it very clear that more research needs to be done on how such pertinent issues can be dealt with. The chapter also focused on various theories related to the title. In conclusion, the chapter looks at the interconnection between variables in the conceptual framework.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This section delves into the study's methodology. It outlines the design used in research, selected populace, sampling procedures, sample size, research tools, pilot study, reliability, validity, approaches used in the data collection and analysis and ethics.

3.1 Research Design

This study used the descriptive model which is utilized in describing attributes of a populace being researched upon. It basically describes characteristics of a population which are in descriptive categories and then represented through visual aids like charts and graphs. The main variable was healthcare provision; independent variables included funding, medical staffing, referral management and procurement of medical equipment.

3.2 Study Locale

Meru County was the base of the study. The size of Meru County is about 6,936 km². The total population is 1.4 million (Kenya census 2009). Meru county is located at Latitude: 0° 02' 46.54" N and Longitude: 37° 39' 21.13" E. The main economic activity of people living in Meru County is agriculture. The county has 9 sub-counties namely: North Imenti, Buuri Sub County, Central Imenti, Tigania East, Igembe South, Igembe Central, South Imenti, Tigania West and Igembe North

3.3 Target Population

Meru County has a total of 116 public health facilities. The target population for this study was 14 hospital administrators who serve in the administrative dockets such as hospital in charges, 332 medics who are the different medical personnel such as doctors, nurses and clinicians, and 450 local residents. Local residents were mainly patients who directly interact with the health system.

This is as summarized in Table 1

Table 1

Target Population

Category	Target Population (N)	Percentage (%)
Hospital administrators	14	2
Medics	332	42
Local residents	450	56
Total	796	100

Source: Meru County Government Records (2020)

3.4 Sample size and sampling procedure

A descriptive kind of study requires a minimum of 10% sample size out of the targeted populace (Mugenda and Mugenda, 2003). According to Kombo and Tromp (2006), a minimum of thirty respondents is required for precise analysis. Sample size was determined by the need to have sample which instantiates the whole populace. Because target population involves different groups from different backgrounds, stratified random sampling was used to choose a group 159 respondents within Igembe South Sub County.

The method is especially useful in events where target populace is composed of different peoples; in this case the selected population comprises of different levels of employee groups, it is more than ten percent of the targeted populace and is more than thirty components. Table 3.2 shows 20% sample size that was extracted from the total targeted populace of 796.

Table 2***Population and Sample Size***

Category	Target Population (N)	Sample Size (n)	Percentage (%)
Hospital administrators	14	3	1%
Medics	332	66	42%
Local residents	450	90	57%
Total	796	159	100%

Source: Researcher, (2020)

Sample size formula:

$$n_h = (N_h / N) * n$$

 n_h = Sample size for h^{th} stratum

 N_h = Population size for h^{th} stratum

 N = Size of entire population

 n = Size of entire sample

Sample size computation:



Hospital Admins

$$\begin{array}{r} 74 \\ \times 159 \\ \hline 666 \\ 1180 \\ 11646 \\ \hline \end{array} = \frac{11646}{398} = 2.7 \text{ Round off: } 3$$

Medics

$$\begin{array}{r} 166 \\ \times 159 \\ \hline 1494 \\ 2598 \\ 26394 \\ \hline \end{array} = \frac{26394}{398} = 66.3 \text{ Round off: } 66$$

Locals

$$\begin{array}{r} 225 \\ \times 159 \\ \hline 2025 \\ 3375 \\ 35775 \\ \hline \end{array} = \frac{35775}{398} = 89.8 \text{ Round off: } 90$$

Source: Researcher (2020)

3.5 Construction of Research Instruments

Open and closed ended questionnaires were employed for data collection. The questionnaire basically had a group of questions related to the subject topic and it is very useful when collecting data (Mugenda & Mugenda 2003). This method used for data collection was chosen because it is free from bias and exaggeration. Using both closed and open ended questionnaires ensured consistency in data collected with a bit of explanation. Because the target population is big enough, the level of accuracy is high hence the results can be counted on. Information was collected from the county's hospital administrators, medical staff and local residents.

3.6 Testing for Validity and Reliability

3.6.1 Validity test

Creswell (2005) defines validity as the level of accuracy with which an account represents the actual social phenomena of respondents. In this study validity was achieved through engaging the supervisor and other colleagues in discussion regarding the subject study. A pilot study was conducted to determine their appropriateness. Any ambiguity in the questionnaires was cleared before being presented to the respondents.

3.6.2 Reliability test

Reliability is how much an examination instrument produces steady and reliable outcomes (Greener, 2008). In this investigation, an unwavering quality test was used to set up the capacity of the survey to create steady outcome by internal consistency techniques. This was achieved by use of Cronbachs Alpha. Coefficient of 0.7- 0.8 demonstrates satisfactory dependability and 0.8 or higher showed great unwavering quality (Robinson, 2009). An unwavering quality coefficient of ≥ 0.8 demonstrates that the instruments are dependable (Mugenda and Mugenda 2003).

3.7 Data collection methods and procedures

Questionnaires were utilized in the process of collection of data. The questionnaire basically had a group of questions related to the subject topic and it is very useful when collecting data (Mugenda & Mugenda 2003). This method for data collection was chosen because it is free from bias and exaggeration. It gives respondents sufficient time to think about the questions and give accurate answers. Because the target population is big enough, the level of accuracy was high making the results reliable. Information was collected from the county's hospital administrators, medical staff and local residents

3.8 Proposed data analysis and techniques

The researcher sorted, edited, coded and analyzed primary data that was collected – this was to eliminate errors. Questionnaires were adequately examined for credibility and verification. Data analysis was executed using the descriptive and content analysis approaches. Tables were used for tabulation and coding of gathered data. Analysis of data employed SPSS 16.0. Regression analysis model was also used which basically creates a presumptuous linear correlation among the different variables. Multiple regression analysis entails discovering the finest straight-line correlation to describe how dependent variable (Y), relies on independent variable, (X). Once an estimation of the relationship is established, the equation can then be used.

$$Y = \alpha + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

X = Independent variables

X₁ – Medical staffing

X₂ – Referral Management

X₃ – Funding

X₄- Procurement of medical equipment

Y = Dependent variable (Healthcare Provision)

α - constant

b₁- b₄ = Coefficients

e = Error margin

This ensured that data analysis is systematic so that useful conclusions and recommendations are drawn. Tables were used for presentation of output data. Objectives of the study were used as a guide to elucidate the outcome through which inferences and suggestions can be made.

3.9 Ethical Considerations

Permission was sought from respondents, to ensure that only those willing to participate did participate; anonymity in the questionnaires was also attended to. Before the actual research, an authorization from the National Commission for Science, Technology and Innovation was acquired. An approval letter was also obtained from Mount Kenya University. There was an adherence to ERC regulations. The researcher ensured that information in the research was used for research purposes only.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter focuses on research findings drawn from analysis, interpretation, and presentation of data. There are two main segments: The first segment provides descriptive statistics, which focuses on the background information of the respondents. Second segment submits an analysis of the responses vis a vis the specific study objectives.

4.2 Response Rate

The study had 159 questionnaires distributed among medical personnel and the general public in figures of 69 and 90 respectively.

Out of the 159 questionnaires, 127 were filled and handed back to the researcher within the same day, 32 were never returned, giving an 80% response rate.

Table 3

Response Rate

Response Rate	Frequency	Percentage
Returned	127	80
Not Returned	32	20
Total	159	100

Source: Research Data, 2020

4.3 General Information on Respondents

Respondents were required to state their gender, age bracket, work type and length of service.

Table 4

Distribution of Respondents by Gender

Gender	Medical Staff	General Public	Percentage
Male	35	40	59.1%
Female	25	27	40.9%
Total	60	67	100%

Source: Research Data, 2020

Based on the findings in the table, 59.1% of respondents in the study within Igembe South Sub County was represented by male while 40.9% were female.

Table 5

Distribution of Respondents by Age

Age Bracket	Medical Staff	General Public	Percentage
<35	26	52	61.3%
35-39	12	8	15.7%
40-50	14	0	11.0%
51-60	8	5	10.0%
>60	0	2	2.0%
Total			100%

Source: Research Data, 2020

According to the findings, majority of respondents were less than 35 years of age, represented by 61.3% of the total population, while those between 35 and 39 years were 15.7%, those between 40 and 50 years were 11.0%, those between 51 and 60 years were 10.0% while those above 60 years were only 2% of the respondents.

Table 6***Distribution of Respondents by Work Type***

Work Type	Medical Staff	General Public	Percentage
Casual	36	26	48.8%
Self-employed	0	32	25.2%
Civil Servant	24	2	20.5%
Other	0	7	5.5%
Total			100%

Source: Research Data, 2020

As per the findings in the table, 48.8% of respondents were casual workers, meaning their job description was either on temporary or part-time basis, 25.2% were self-employed, 20.5% were civil servants while 5.5 % belonged to other job categories.

Table 7***Distribution of Medical Staff by Length of Service***

Length of service (Years)	Frequency	Percentage
<5	36	60.0%
6-10	9	15.0%
11-15	7	11.6%
16-20	4	6.7%
>20	4	6.7%
Total	60	100%

Source: Research Data, 2020

This was conducted among the healthcare staff only without the general public since the researcher wanted to know how long the respondents had served in the health sector.

Among the medical staff, 60.0% had been in service for less than 5 years, 15.0% had served for between 6 and 10 years, 11.6% between 11 and 15 years, 6.7% between 16 and 20 years while 6.7% of medical staff had served for more than 20 years in the health sector.

Table 8***Distribution of Medical Staff by Highest Qualification***

Highest Qualification	Frequency	Percentage
High School Certificate	10	16.8%
College Certificate	8	13.3%
College Diploma	26	43.3%
Undergraduate	12	20.0%
Masters	2	3.3%
PhD	2	3.3%
Other	0	0
Total	60	100%

Source: Research Data, 2020

From the table above, majority of medical staff (43.3%) had a college diploma, 16.8% had a high school certificate (majority of who were casual laborers), 13.3% had a college certificate, 20.0% had an undergraduate while 3.3% had a Masters and PhD respectively.

4.4 Influence of Staffing on Provision of Healthcare Services in Devolved Systems

Medical staff are such an important entity in the provision of medical services, so much to the extent that their absence means no service delivery. On many occasions, there have been cases of healthcare workers' strikes and go-slows which had negatively impacted delivery of healthcare. Many times, patients had gone to hospitals only to be overcrowded due to the small number of staff in the facilities. The research focused on issues such doctor-patient ratio and availability of required services.

Table 9***Medical Personnel Response on Staff-patient Ratio, Training and Motivation***

Statement	Agree	%	Disagree	%
The hospital has enough healthcare workforce	22	36.7	38	63.3
There are training sessions organized by the hospital/ government	27	45.0	33	55.0
I am well motivated as a healthcare worker	44	73.3	16	26.7

Source: Research Data, 2020

From the table, 36.7% of healthcare staff stated that they had enough healthcare workforce at the hospital level while 63.3% sighted a shortage of workers. On training and refreshers, 45.0% said there were training sessions organized by the hospital/government while a majority of 55.0% sighted a lack of additional training to up their skills. 73.3% of medical staff were well motivated to their daily duties while 26.7% sighted lack of necessary motivation.

The researcher further wanted to know the challenges faced by medical staff in the provision of healthcare services.

Table 10

Medical Personnel's Response on Challenges Facing Healthcare Staff

Challenge	Agree		Disagree	
	Frequency	%	Frequency	%
Poor remuneration	26	43.3	34	56.7
Heavy workload	41	68.3	19	31.7
Poor staff management	32	53.3	28	46.7

Source: Research Data, 2020

From the findings indicated on the table, heavy workload was the greatest challenge facing medical staff, represented by 68.3%, poor staff management came in second at 53.3% while poor remuneration was third with 43.3%. However, 56.7% of medical staff did not find poor remuneration to be a challenge facing healthcare.

The research went further to investigate factors that influence productivity, effectiveness and motivation of employees. The responses were measured on a scale of 1- Slightly Agree, 2- Agree, 3 – Not Sure, 4- Disagree, 5- Strongly Disagree

Table 11

Medical Personnel's Response on Productivity, Effectiveness and Motivation

Statement	SA		A		NS		D		SD	
	F	%	F	%	F	%	F	%	F	%
Inadequate workforce leads to low productivity of health services	34	56.7	16	26.6	4	6.7	2	3.3	4	6.7

Training is necessary for effective provision of healthcare services	36	60.0	18	30	0	0	4	6.7	2	3.3
As a healthcare worker, the level of motivation affects provision of services	35	58.3	10	16.7	5	8.3	6	10.0	4	6.7

Source: Research Data, 2020

Based on the table above, 60.0% of healthcare workers highlighted the need for additional training as being necessary for effective provision of healthcare services. Motivation of employees came in second at 58.3% while 56.7% stated that inadequate workforce leads to low productivity in the health sector.

Table 12

General Public's Response on Doctor-Patient Ratio and Service Delivery

Statement	Agree	%	Disagree	%
The hospitals have enough healthcare workforce	27	40.3	40	59.7
I readily get the services I want while in hospital	15	22.4	52	77.6
I have a regular or personal doctor	7	10.4	60	89.6

Source: Research Data, 2020

From the findings in the table above, 59.7% of the general public stated a lack of enough healthcare workers while 40.3% said there were enough workers at the hospital level. 77.6% of the general public did not readily get the services they needed at the hospital while 22.4% readily received the required services. 89.6% did not have a regular doctor while 10.4% of the general public do had a personal/regular doctor.

The study went further to establish how staffing affects provision of healthcare services. The responses were measured on a scale of 1- Slightly Agree, 2- Agree, 3 – Not Sure, 4- Disagree, 5- Strongly Disagree

Table 13***General Public's Response on Shortage of Healthcare Personnel and Productivity***

Statement	SA		A		NS		D		SD	
	F	%	F	%	F	%	F	%	F	%
My hospital experiences shortages of health workers	30	44.8	16	23.9	3	4.5	8	11.9	10	14.9
Inadequate workforce has led to low productivity of health services	28	41.7	20	29.9	5	7.5	5	7.5	9	13.4
Healthcare workforce influence the provision of health services	18	26.9	26	38.8	8	11.9	6	9.0	9	13.4

Source: Research Data, 2020

From the findings in the table, 44.8% sighted a shortage of health workers as a major issue affecting healthcare provision. 41.7% strongly agreed that an inadequate workforce has led to low productivity of health services. 38.8% agreed that healthcare workforce influenced the provision of health services.

4.5 Influence of Referral Management on Provision of Healthcare Services

Referral management goes a long way in ensuring effective provision of healthcare services. This is because a hospital will only handle cases that it's able to and refers all other complex cases to the next level. This, however, had its own share of challenges. Improper referral procedures and neglecting them altogether had led to overcrowding in higher level hospitals where patients were seeking treatment that is readily available at the local dispensary level. This had also led to longer waiting times for patients and heavy workload for the medical staff. The lack of proper and sufficient facilities had also crippled the referral process since there had been cases of patients being referred to the next level hospital only to find out that there was no equipment to handle their treatment.

Table 14***Medical Staff's Response to Referral Procedures, Availability of Specialists, Referral Capacity and Waiting Time***

Statement	Agree	%	Disagree	%
There exist clear procedures for referral within the county health system	45	75.0	15	25.0
Clear procedures are followed for patient referral	50	83.3	10	16.7
There are enough specialists for referral cases within the county	51	85.0	9	15.0
Patients experience a short waiting time during referral	34	56.7	26	43.3
The county health system has enough capacity to handle referral cases	22	36.7	38	63.3

Source: Research Data, 2020

Based on the findings indicated above, 75.0% stated that there exists clear procedures for referral and 83.0% stated that these procedures are followed during patient referral. 85.0% said there were enough specialists to handle referral cases and 56.7% highlighted that patients experience short waiting times during referral. However, 63.3% stated that the county health system lacks enough capacity to handle referral cases.

Table 15***Medical Staff's Response on the Importance of Referral Guidelines and Amenities***

Statement	SA		A		NS		D		SD	
	F	%	F	%	F	%	F	%	F	%
Clear referral guidelines are necessary for effectiveness in delivery of health services	48	80.0	10	16.7	0	0	2	3.3	0	0
The availability of specialists affects provision of referral services	38	60.9	18	33.3	2	2.9	2	2.9	0	0
Availability of referral amenities influence the provision of healthcare	38	65.2	20	31.9	0	0	2	2.9	0	0

Source: Research Data, 2020

From the table above, 80.0% of medical staff in the research agreed that clear referral guidelines were necessary for effectiveness in health service delivery. 65.2% stated that the availability of referral amenities influenced the provision of healthcare and 65.2% strongly agreed that the availability of specialists affects provision of referral services.

Table 16

General Public's Response to the Levels of Healthcare Available

Hospital Level	Hospital Type	Available?				Number available
		Yes	%	No	%	Mean
2	Local Dispensary	61	91.0	6	8.9	2.32
3	Health Center	53	79.1	14	20.9	2.2
4	Sub county	50	74.6	17	25.4	1.89
5	County Referral	33	49.3	34	50.7	1
6	National Referral	0	0	67	100	

Source: Research Data, 2020

From the table above, 91.0% stated that local dispensaries (level 2 hospitals) were available within their reach, with a mean of 2.32 which represents the average number of facilities available. 79.1% stated that health centers (level 3 hospitals) were within their reach with a mean number of 2.2 per individual's reach. 74.6% said that sub county hospitals (level 4) were within their reach with an average of 1.89 facilities per an individual's reach. 49.3% stated that County Referral Hospitals (level 5) were within their reach with an average of 1 hospital per individual's reach. However, 100% of the general public stated that national referral hospitals (level 6) were not within their reach.



Table 17***General Public's Response to Referral Procedures, Availability of Specialists, Waiting Time, Transportation and Equipment***

Statement	SA		A		NS		D		SD	
	F	%	F	%	F	%	F	%	F	%
Clear procedures for referral exist within the county health system	3	4.5	12	17.9	20	29.8	16	23.9	16	23.9
There are enough specialists for referral cases in the county	2	3.0	6	9.0	20	29.8	24	35.8	15	22.4
Transportation of specialists for referral cases is swift	6	9.0	14	20.9	15	22.3	10	14.9	22	32.9
The county health system has enough equipment for referral cases	3	4.5	2	3.0	20	29.8	20	29.8	22	32.9
During referral, waiting time is short	2	3.0	4	6.0	18	26.9	16	23.8	27	40.3

Source: Research Data, 2020

Based on the above findings, 29.8% were not sure whether referral procedures exist within the county health system while 23.9% disagreed and strongly disagreed respectively. On specialists, 35.8% said there were not enough specialists to handle referral cases while 29.8% were not sure, 22.4% strongly disagreed. In cases where specialists needed to travel in order to attend to referral cases, 32.9% strongly disagreed with the swiftness of their transportation/arrival, 14.9% disagreed, 22.3% were not sure while 20.9% agreed. On equipment, 32.9% strongly disagreed with the fact that the county health system has enough equipment for referral, 29.8% disagreed while 20.0% were not sure. Lastly, on waiting time during referral, 40.3% strongly disagreed with the fact that waiting time is short, 23.8% disagreed while 26.9% were not sure; 6.0% agreed while 3.0% strongly agreed.

4.6 Influence of funding on healthcare provision

Funding is such a crucial aspect within the healthcare sector since for any service to run, there must be funds. Funds will pay salaries, purchase drugs and equipment and will ensure that everything runs well. The researcher sought to find out how funding impacts provision of health services at the devolved level with focus on timely disbursement, enough allocation and adequacy. He also focused on challenges related to funding such as corruption and mismanagement.

Table 18

Medical Staff's Response to Enough Allocation and Timely Disbursement of Funds

Statement	Agree	%	Disagree	%
The health sector receives enough allocation of funds in the county budget	20	33.3	40	66.7
There are adequate finances to run the health sector	22	36.7	38	63.3
There is timely disbursement of funds to the health sector	19	31.7	41	68.3

Source: Research Data, 2020

On funding, 66.7% disagreed with the statement that the health sector received enough allocation of funds in the county budget while 33.3% agreed. On adequacy of funds, 63.3% stated that there were not enough funds to run the health sector at the devolved level while 36.7% agreed. 68.3% stated that there were no timely disbursement of funds to the health sector.

On challenges related to funding of the health sector, the responses were evaluated on a scale of 1- Slightly Agree, 2- Agree, 3 – Not Sure, 4- Disagree, 5- Strongly Disagree

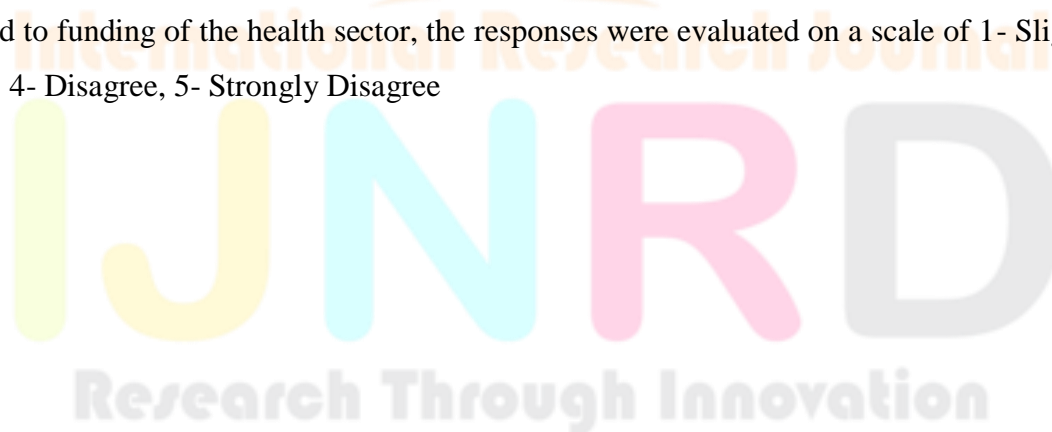


Table 19***Medical Staff's Response to the Challenges Related to Funding of the Health Sector***

Statement	SA		A		NS		D		SD	
	F	%	F	%	F	%	F	%	F	%
Lack of funds	44	73.4	9	15.0	0	0	5	8.3	2	3.3
Corruption	37	61.7	10	16.7	2	3.3	8	13.3	3	5.0
Mismanagement	34	56.7	6	10.0	0	0	12	20.0	8	13.3
Lack of medical equipment	36	60.0	8	13.3	2	3.3	10	16.7	4	6.7

Source: Research Data, 2020

Based on the findings in the table, lack of funds emerged as the greatest hurdle as far as funding is concerned with 73.4%. Corruption and lack of medical equipment came in second with 61.7% and 60.0% respectively while 56.7% highlighted mismanagement of funds.

4.7 Influence of procurement of medical equipment on provision of healthcare services

Procurement of medical equipment is yet another important aspect as far as healthcare provision is concerned. This is because there had been cases of counterfeit and expired drugs products being procured by hospitals. Some procurement procedures are not transparent and that's where corruption comes in, such that things are procured but never delivered. Long procurement procedures also tend to delay service delivery.

Table 20***Medical Staff's Response to Procurement Procedures and Standards***

Statement	Agree	%	Disagree	%
There exists clear procurement procedures for medical equipment within the hospital	43	71.6	17	28.4
The existing procurement procedures are effective	25	41.7	35	58.3
Medical equipment is delivered on time	34	56.7	26	43.3
Procurement process follows some standards	40	66.7	20	33.3

Source: Research Data, 2020

Based on the tabulated finding above, 71.6% agreed that there exist procurement procedures for medical equipment within the hospitals. However, 58.3% disagreed with the effectiveness of these procedures. 56.7% stated that medical equipment is delivered on time while 43.3 % said it is not delivered on time. On standardization, 66.6% stated that procurement procedures follow some standards while 33.3% disagreed.

Table 21***Medical Staff's Response to Accountability, Timely Delivery, Transparency Technology and Quality in Procurement***

Statement	SA		A		NS		D		SD	
	F	%	F	%	F	%	F	%	F	%
Our procurement procedures ensure accountability	8	13.3	30	50	8	13.3	6	10.0	8	13.3
Timely delivery of medical apparatus affects healthcare provision	40	66.7	14	23.3	2	3.3	4	6.7	0	0
Procurement procedures influence the provision of health services	32	53.3	22	36.7	2	3.3	0	0	4	6.7
There is need for transparency and accountability in procurement of medical	47	78.3	13	21.7	0	0	0	0	0	0
Effective health technology procurement leads to safe healthcare	40	66.7	20	33.3	0	0	0	0	0	0
Existence of procurement standards influence the quality of medical equipment	39	65.0	19	31.7	0	0	2	3.3	0	0
An effective public procurement system allows healthcare to provide satisfactory services	34	56.7	20	33.3	4	6.7	0	0	2	3.3

Source: Research Data, 2020

From the data in the table above, 50.0% agreed that procurement procedures ensure accountability, 13.3% strongly agreed, 13.3% were not sure, 10% disagreed while 13.3% strongly disagreed. 66.7% strongly agreed that timely delivery of medical apparatus affects healthcare provision while 23.3% agreed. 53.3% strongly agreed that procurement procedures influenced provision of health services while 36.7% agreed. On transparency, 78.3% stated that there was need for transparency and accountability in procurement of medical equipment. On technology, 66.7% strongly agreed that effective health technology procurement leads to safe healthcare while 33.3% agreed. 65.0% strongly agreed that existence of procurement standards influenced the quality of medical equipment while 31.7% agreed. Lastly, 56.7% strongly agreed that an effective public procurement system allows healthcare to provide satisfactory services, 33.3% agreed while 3.3% strongly disagreed.

4.8 Healthcare Provision

This is the main dependent variable in the study. The researcher focused on affordability of healthcare, choice of facility and waiting time. The responses were measured on a scale of 1- Slightly affordable, 2- Affordable, 3-Uncertain, 4- Unaffordable 5- Very Unaffordable

Table 22

Medical Staff's Response to Affordability of Healthcare

Service	Affordability									
	SA	%	A	%	U	%	UA	%	VA	%
Basic checkup	28	45.0	26	43.5	4	8.6	0	0	2	2.9
Emergency	20	33.3	19	31.9	6	11.6	2	2.9	13	20.3
Admission	22	36.2	23	37.8	2	2.9	4	5.8	9	17.3
Chronic diseases	16	26.1	16	26.1	0	0	7	11.6	21	36.2

Service	Waiting Time											
	Immediate	%	< 25mins	%	1 hr	%	2 hrs	%	3-4 hrs	%	> 4hrs	%
Basic checkup	29	48.3	10	16.7	18	30.0	3	5.0	0	0	0	0
Emergency	38	63.4	12	20.0	2	3.3	0	0	6	10.0	2	3.3
Admission	28	46.6	18	30.0	0	0	7	11.7	7	11.7	0	0
Chronic diseases	25	41.7	9	15.0	4	6.7	5	8.3	7	11.7	10	16.6

Source: Research Data, 2020

Table 23***Medical Staff's Response to Waiting Time When Seeking Medical Attention*****Source: Research Data, 2020**

Based on the findings in the table, 48.3% of medical staff stated that basic checkup is attended to immediately while 16.7% said it's done within 25 minutes, 30.0% said it's within an hour while 5.0% said within 2 hours. For emergency cases, 63.4% of medical staff stated that they're attended to immediately while 20.0% said within less than 25 minutes. 46.6% said admissions were done immediately while 30.0% stated that it's within less than 25 minutes. 41.7% stated that cases of chronic illnesses were attended to immediately while 15.0% said within less than 25minutes. However, 6.7 % said it's within an hour, 8.3% said within 2 hours, 11.7% said within 3-4 hours while 16.6% said it takes more than four hours. This should be attributed to the kind of facility that one attends, since some medical facilities tend to have more medical personnel than others.

The researcher went ahead to find out the affordability of healthcare form the public's point of view. The responses were measured on a scale of 1- Slightly affordable, 2- Affordable, 3-Uncertain, 4- Unaffordable 5- Very Unaffordable

Table 24***General Public's Response to Affordability of Healthcare***

Service	Affordability									
	SA	%	A	%	U	%	UA	%	VU	%
Basic checkups	15	22.4	21	31.4	5	7.5	15	22.4	11	16.3
Emergency	10	14.9	24	35.8	15	22.4	8	11.9	10	14.9
Admission	12	17.9	29	43.4	8	11.9	8	11.9	10	14.9
Chronic diseases	7	10.4	20	29.9	4	6.0	12	17.9	24	35.8

Source: Research Data, 2020

For basic checkups, 22.4% of the general public stated that it's slightly affordable, 31.4% said it's affordable while 22.4% said it's unaffordable, 16.3% said it's very unaffordable. 35.8% said emergency cases were affordable, 22.4% were uncertain, 11.9% said it's unaffordable while 14.9% said it's very unaffordable. 43.4% said admissions were affordable while 17.9% said they're slightly affordable, 11.9% said it's unaffordable while 14.9% said it's very unaffordable. Most respondents in the general public stated that treatment of chronic diseases is very unaffordable at 35.8% while 17.9% said it's unaffordable, 29.9% said it's affordable,10.4% said it's slightly affordable while 6.0% were uncertain.

Table 25**General Public's Response to Waiting Time When Seeking Medical Attention**

Service	Waiting Time											
	Immediate	%	< 25mins	%	1 hr	%	2 hrs	%	3-4 hrs	%	> 4hrs	%
Basic checkup	3	4.4	12	17.8	10	13.3	6	8.9	6	8.9	30	46.7
Emergency	24	37.9	7	11.1	15	22.2	3	4.4	10	13.3	8	11.1
Admission	10	14.9	5	7.5	18	26.9	8	11.9	8	11.9	18	26.9
Chronic diseases	10	14.9	6	9.0	3	4.5	3	4.5	8	11.9	37	55.2

Source: Research Data, 2020

46.7% of the general public stated that they had to wait for more than 4 hours for basic checkup, 17.8% said the waiting time is less than 25 minutes while 4.4% said it's immediately. For emergency cases, 37.9% stated that they're attended to immediately, 11.1% said it's within 25 minutes, 22.2% said it's within an hour, 4.4% said within two hours 13.3% said between 3 and 4 hours while 11.1% said it takes more than 4 hours.

14.9% said admissions were done immediately, 26.7% said it's within an hour while 26.9% said it takes more than four hours. Attending to patients who require special medical attention takes the longest time within 55.2% of respondents saying they had to wait for more than 4 hours to be attended to, 11.9% said it takes 3-4 hours while 14.9% said it's immediately.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction.

This chapter brings to the fore a summary of the findings in the study as per the objectives and the necessary recommendations. The objectives were how staffing, referral management, funding procurement of medical equipment influenced the provision of healthcare services in devolved systems.

5.2 Summary of the Study

The health sector under devolution has had its fair share of challenges spanning from management issues, inadequate funding, unclear policies and lack of transparency in procurement of medical equipment. This research set out to examine the aspects of staffing, referral management, funding and procurement of medical equipment and how they influenced the provision of healthcare services within the devolved system, a case of Igembe South Sub County.

5.2.1 Medical Staffing and Provision of Healthcare Services

The study revealed that most health centers did not have enough medical personnel, this often led to overcrowding and long waiting hours before receiving medical attention. The majority of respondents stated that they did not have a personal or regular doctor which can be attributed to this lack of personnel. Most respondents among the medics also highlighted heavy workload and poor staff management as being among some of the issues that hinder effective healthcare delivery. In some areas, patients had to wait for more than 4 hours before receiving a basic medical checkup.

5.2.2 Referral Management and Provision of Healthcare Services

Most respondents attested to the fact that there exists clear referral procedures within the county health system. However, these procedures were hardly followed. The study revealed that hospitals at the county and sub county level were often overcrowded with patients seeking basic medical care which can be received at the local dispensary level. Such higher level hospitals were designed to focus on more complex and referral cases. The study also established the lack of enough specialists who can handle special cases. In most cases, whenever a specialist is required to handle a referral, their arrival is not swift and sometimes they were not available since there is a shortage of the same. This not only threatens the lives of patients but also cripples the referral system altogether.

5.2.3 Funding and Provision of Healthcare Services

The health sector requires funding for smooth running of services. Findings from the research revealed that the county budget allocation to the health sector is insufficient and disbursement is never on time. This can be attested to the many demonstrations, strikes and go-slows by healthcare workers at the county level over unpaid wages. On the same breadth, the study also revealed that corruption and mismanagement of resources were among some of the issues that deter the provision of healthcare services in the devolved units as far as funding is concerned.

5.2.4 Procurement of Medical Equipment and Provision of Healthcare Services

The study revealed that in as much there were procurement procedures already in place at the devolved units, these procedures, and standards were hardly effective. This is because of the lack of transparency and accountability in the entire procurement process. The study also revealed that corruption and mismanagement were some of the hurdles that hinder the effectiveness in procurement. This had often led to the purchasing of substandard and counterfeit equipment.

5.3 Conclusion.

Based on the findings, the study concluded that medical staffing influences the provision of medical services in the devolved systems. Igembe South Sub County had a very low doctor to patient ratio with majority of hospitals being overcrowded. Patients often had to wait for long periods of time before being attended to. This not only does it negatively impact the patients but also the medics since they must cope with heavy workload.

Referral management influences the provision of health services since the referral system was put in place to ensure that low level hospitals handle the basic cases while more complex cases were handled at the sub county, county and national level. From the study, inasmuch as there were clear referral guidelines already in place, this had not been observed. The sub county hospital in Igembe South is often overcrowded with patients, most of whom had minor cases that could be handled at the local dispensaries. In cases of referral, patients often had to wait for long periods of time before a specialist arrived or were sometimes turned back to referred to more expensive private facilities due to lack of equipment.

Funding influences the provision of healthcare services since it's these funds that pay workers and run the whole system altogether. The study revealed that there were insufficient funds that were channeled to the county health system. This can be attributed to the lack of enough personnel and equipment. The study also concluded that corruption and mismanagement of resources tend to greatly hinder the effective provision of healthcare services.

Lastly, the study came to a conclusion that procurement of medical equipment and drugs influences the provision of healthcare by ensuring that only standardized and high quality medical equipment was purchased. However, corruption, lack of transparency and accountability when it comes to procurement procedures had negatively impacted the whole process.

5.4 Recommendations.

With regard to the findings, the study recommends that: The county government to hire more medical practitioners and specialists to handle the high number of patients and the cases that need specialized care; grievances by workers should be addressed amicably and swiftly to avoid escalations and crippling of the health system; the county government to build more referral hospitals at the sub county level since the county has only one referral hospital which is not easily accessible to all and lacks the ability to handle many cases at once; Since the healthcare industry is progressive, there is need for medical personnel to undergo additional trainings and refresher courses to up their skills and keep them on the know; lastly, the county government needs equip the local low level health centers so that they can handle minor cases, this will ensure effectiveness of the referral system.

5.5 Suggestion for Further Study.

The study recommends a research on the following areas, based on the findings and the scope of work:

- i) A study should be conducted on the role of management in the health sector to get a solution to the wave of crises that has been witnessed in the health sector
- ii) A study should be conducted on the best way to handle healthcare under the devolved units to avoid the tussle and blame game that has been witnessed between the counties and the national government.



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APPENDICES

APPENDIX I: Consent Form

Dear respondent. You are invited to take part in a research that is being done by one Anthony M Murungi, student of MKU. The research seeks to explore some of the management functions influencing the provision of healthcare services in devolved systems. The research is a requirement for successful completion of Master in public administration and management degree in devolved government administration, which the researcher is pursuing.

Your feedback will be collected and documented incognito and will be stored with very careful confidentiality. Group data will be handled in a generalized manner where feedback will be given with a general view. Strict security will be observed in data storage ensuring that only the researcher can retrieve it.

Taking part in this research is 100% optional without any coercion whatsoever. If you decide to take part and then change your mind in the middle, you are completely allowed without any repercussions whatsoever. Nevertheless, after submitting your response, you will no longer be able to pull out of the. In case of any concerns about your rights as a research participant, please be in touch with the Chairman, Mount Kenya University, Ethical Review Committee, PO BOX 342-0100 Thika.

Giving of Consent

1. I've gone through this cover letter and I fully perceive the requirements of this research as a participant. I agree to take part. I confirm that I'm at least 18 years old.

2. I confirm that I have gone through and well understood the information sheet for this research

3. I understand that my taking part in this study is out of free will and that I can pull out at any moment without any repercussions whatsoever.

4. I accept to participate in the above research.

Participant: Sign _____ Date _____

Investigator: Sign _____ Date _____



APPENDIX II: Introductory Letter

ANTHONY MWENDA MURUNGI,

P.O. BOX 692-60600,

MAUA.

10th FEBRUARY 2020.

THE CHIEF OFFICER OF HEALTH,

MERU COUNTY,

P.O. BOX 120-60200,

MERU.

Dear Madam,

RE: REQUEST TO CARRY OUT A RESEARCH IN HEALTH FACILITIES IN MERU COUNTY

I am a staff working with Meru County Government in the Health Department and a student at Mt. Kenya University Nkubu Campus. I am seeking for your permission to conduct an academic research on the impact of devolved healthcare funding in the health sector at the local level, with a case study of Meru County Government.

This is to help me accomplish partial requirements for the award of Degree of Master in Public Administration and Management.

Kind regards,

Yours faithfully,

Anthony M.M



APPENDIX III: Questionnaire for Employees

Questionnaire

I'm a student of Mt. Kenya University undertaking degree of Master in Public Administration and Management. This questionnaire seeks to solicit facts regarding management functions influencing provision of healthcare in the devolved systems and the feedback derived from this study shall be utilized only for academic purposes.

Medical Center and Ward name.....

Section A: General Information

Please [√] appropriately.

1. Gender

Male Female

2. Age (in years)

< 35 35- 39 40- 50 51-60 >60

3. Length of service in your current organization (in years)

< 5 6-10 11-15 16-20 > 20

4. Highest qualification

High School Certificate College Certificate College Diploma Undergraduate

Masters Degree PhD

Other

5. Work type

Casual Civil Servant



Section B**Staffing**

1. Please [✓] where you **agree/disagree** with the following statements:

Statement	Agree	Disagree
The hospital has enough healthcare workforce		
There are training sessions organized by the hospital/ government		
I am well motivated as a healthcare worker		

1. Kindly indicate whether or not you face these challenges. Use [✓]

Challenge	Agree	Disagree
Poor remuneration		
Heavy workload		
Poor staff management		

2. Kindly indicate your **level of agreement/disagreement** with the following statements

Use 1: Strongly agree, 2. Agree 3. Not sure 4. Disagree 5. Strongly disagree

Statement	1	2	3	4	5
Inadequate workforce leads to low productivity of health services					
Training is necessary for effective provision of healthcare services					
As a healthcare worker, the level of motivation affects provision of services					

Referral Management

1. Kindly [✓] where you **agree/disagree** with these statements below:

Statement	Agree	Disagree
There exists clear procedures for referral within the county health system		
Clear procedures are followed for patient referral		
There are enough specialists for referral cases within the county		
Patients experience a short waiting time during referral		
The county health system has enough capacity to handle referral cases		

2. Kindly indicate your **level of agreement/disagreement** with the statements below

Use: 1: Strongly agree, 2. Agree 3. Uncertain 4. Disagree 5. Strongly disagree

Statement	1	2	3	4	5
Clear referral guidelines are necessary for effectiveness in delivery of health services					
The availability of specialists affects provision of referral services					
Availability of referral amenities influence the provision of healthcare					

Funding of the health sector

1. Kindly [√] where you **agree/disagree** with these statements below

Statement	Agree	Disagree
The health sector receives enough allocation of funds in the county budget		
There are adequate finances to run the health sector		
There is timely disbursement of funds to the health sector		

2. To what degree do you feel the following matters influence provision of healthcare at the local and county level: 1: Strongly agree, 2. Agree 3. Not Sure 4. Disagree 5. Strongly disagree

Statement	1	2	3	4	5
Lack of funds					
Corruption					
Mismanagement					
Lack of medical equipment					

Procurement of medical equipment

1. Please [√] where you **agree/disagree** with the statements below:

Statement	Agree	Disagree
There exists clear procurement procedures for medical equipment within the hospital		
The existing procurement procedures are effective		
Medical equipment are delivered on time		
Procurement process follows some standards		

2. Kindly indicate your **level of agreement/disagreement**.

Use 1: Strongly agree, 2. Agree 3. Not sure 4. Disagree 5. Strongly disagree

Statement	1	2	3	4	5
Our procurement procedures ensure accountability					
Timely delivery of medical apparatus affects healthcare provision					
Procurement procedures influence the provision of health services					
There is need for transparency and accountability in procurement of medical equipment					
Effective health technology procurement leads to safe healthcare					
Existence of procurement standards influence the quality of medical equipment					
An effective public procurement system allows healthcare to provide satisfactory services					

Healthcare provision

With regard to cost of treatment, how affordable are these services to patients

1-slightly affordable 2- affordable 3- uncertain 4- unaffordable 5- very unaffordable

	1	2	3	4	5
Basic checkup					
Emergency					
Admission					
Chronic diseases (cancer, heart conditions etc)					

How long does someone have to wait when accessing these services?

Service	Duration (minutes)					
	Immediately	< 25 mins	1 hr	2 hrs	3-4 hrs	>4 hrs
Basic checkup						
Emergency						
Admission						
Chronic diseases						

In your opinion, highlight some of the challenges that hinder the provision of healthcare services

.....

.....

.....

APPENDIX IV: Questionnaire for the general public

Questionnaire

I'm a student of Mt. Kenya University undertaking degree of Master in Public Administration and Management. This questionnaire seeks to solicit facts regarding management functions influencing provision of healthcare in the devolved systems and the feedback derived from this study shall be utilized only for academic purposes.

Nearest Medical Center and Ward name.....

Section A- General Information

1. Gender

Male Female

2. Age (in years)

< 35 35- 39 40- 50 51-60 >60

3. Type of work

Casual Self Employed Civil Servant

Other.....

Section B

Staffing

Statement	Agree	Disagree
The hospitals have enough staff, i.e. doctors, nurses and other practitioners		
I readily get the services I want while in hospital		
I have a regular or personal doctor		

Kindly indicate your **level of agreement/disagreement** in the statements below:

Use 1: Strongly agree, 2. Agree 3. Uncertain 4. Disagree 5. Strongly disagree

Statement	1	2	3	4	5
My hospital experiences shortages of health workers					
Inadequate workforce has led to low productivity of health services					
Healthcare workforce influence the provision of health services					

Referral Management

1. Please indicate whether you were on any occasion referred to another health facility due to lack of the necessary equipment and personnel (also indicate the number of times this has happened)

.....

2. Please give the relevant details on whether these levels of healthcare are within your reach (Indicate the number of such hospitals in each case)

Hospital level

Yes/No

Number

2 Local Dispensary

3 Healthcentre

4 Subcounty

5 County Referral

6 National Referral

3. Kindly indicate whether you have the following types of services and at what level (Tick in the checkbox if YES)

Service

Hospital level

Ambulance services

Laboratory services

Medical Screening

Mortuary Services

In patient

4. Kindly indicate your **level of agreement/disagreement** with the statements below:

Use 1: Strongly agree, 2. Agree 3. Not sure 4. Disagree 5. Strongly disagree

Statement	1	2	3	4	5
Clear procedures for referral exist within the county health system					
There are enough specialists for referral cases in the county					
Clear procedures are followed for patient referral					
Transportation of specialists for referral cases is swift					
The county health system has enough equipment for referral cases					
During referral, waiting time is short					

Healthcare provision

1. In your opinion, to what extent do these matters affect your choice in seeking medical attention

1-Doesn't affect 2- slightly affects 3- affects 4- strongly affects 5- very strongly affects

	1	2	3	4	5
Cost of travel					
Means of transport					
Cost of treatment					

2. With regard to cost of treatment, how affordable are these services

1-slightly affordable 2- affordable 3- uncertain 4- unaffordable 5- very unaffordable

	1	2	3	4	5
Basic checkup					
Emergency					
Admission					
Chronic diseases (cancer, heart conditions etc)					

How long does someone have to wait when accessing these services

Service	Duration					
	Immediately	< 25 mins	1 hr	2 hrs	3-4 hrs	>4 hrs
Basic checkup						
Emergency						
Admission						
Chronic diseases (cancer, heart conditions, dialysis etc)						

In your opinion, please indicate some of the challenges that hinder the provision of healthcare services?

.....

.....

.....



APPENDIX V: Budget

Item	Quantity	Total cost
Printing of draft concept paper and proposal	6 copies	16,000
Printing final proposal	4	9,000
Binding cost	10	10,000
Internet services	-	25,000
Stationery	-	14,000
Travelling expenses	-	30,000
Research assistants	-	30,000
Printing final project	9	19,000
Miscellaneous	-	47,000
Grand total		200,000

APPENDIX VI: Work Plan

ACTIVITY	June 2019	June 2019	June 2019	Jun 2019	Jul 2019	Jul 2019	Aug 2019	Sep 2019	Jan 2020	Feb 2021	Feb 2021	Mar 2021	May 2021
Developing a research topic and literature review													
Writing research proposal, first draft													
Submission of proposal third draft													

Submission of proposal Final draft													
Data collection, analysis and presentation													
Submission of first draft project													
Final project presentation													

