FACTORS INFLUENCING UTILIZATION OF ESSENTIAL HEALTH SERVICES AT COAST GENERAL AND TUDOR SUB-COUNTY PUBLIC HOSPITALS, MOMBASA COUNTY, KENYA

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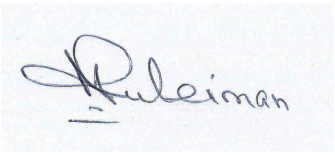
A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PUBLIC HEALTH DEGREE IN EPIDEMIOLOGY AND DISEASE CONTROL OF MOUNT KENYA UNIVERSITY



FEBRUARY, 2025

DECLARATION AND APPROVAL

Student Declaration

I, Arifa Turabali, hereby declare that this project is entirely original to me and has not been published or offered for review by any other institution.

Signature: …… Date: 02-Feb-2025

Arifa Turabali

MPH/2019/54943

Approval by the Supervisors

We hereby attest that the student developed this proposal under our guidance.

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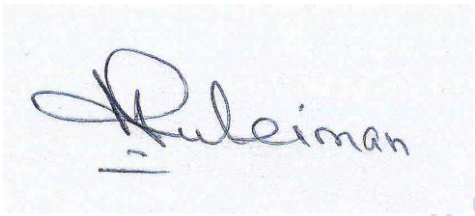
DEDICATION

I dedicate this proposal to my children without whom this project would not have been completed.



ACKNOWLEDGMENT

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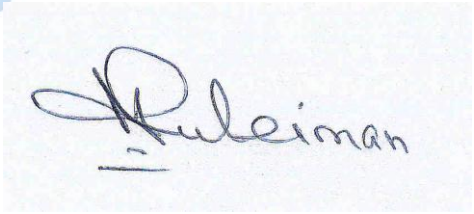
ABSTRACT

Utilization of essential services is vital to strengthen service delivery and improve the lives of a population for a healthy nation. Healthcare utilization is 73.4% among people who are sick. Cost (12.7%), medical supplies, skilled health care personnel, availability of medical equipment, and access (16.2%) are obstacles for some people who choose not to seek healthcare. The overall infant mortality rate in Kenya is 33/1000. The maternal mortality rate is 195/100,000 and the child mortality rate is 57/1000 in Mombasa County. This study investigated the variables affecting how frequently patients at Coast General Referral and Tudor Sub-County Hospitals in Mombasa County used essential services. A cross-sectional approach was taken. 252 patients and 200 medical personnel were the focus of the study selected from the population within the two facilities. Various categories of health care professionals were sampled using random sampling strategies. The Yamane Formula was used to determine the size of the sample study. 200 medical personnel and 252 patients were randomly selected for the purpose of the investigation. Data was gathered using a structured questionnaire from the respondents in the two hospitals by physical administration of the questionnaires. Analysis of the data collected was done through the Statistical Package for Social Sciences (SPSS) version 28.0 through techniques such as frequencies, correlation, and regression and interpreted using descriptive and inferential methods. The multiple linear regression analysis was a key analysis tool utilized and provides evidence that all factors considered, availability of healthcare workers (73.2%), (HRH) (β=0.732, p=0.001), availability of drugs and medical supplies increases at 89.5% (β=0.895, p=0.021), health infrastructure at 54.3%, (β=0.543, p=0.031) and organizational practices at 96.3%, (β=0.963, p=0.017) are useful and positive determinants of the utilization of essential health services. This study recommends focusing on skilled and motivated healthcare workers, adequate and available medical supplies, efficient infrastructure, and effective organizational practices to improve essential health service utilization in the two hospitals within Mombasa County, Kenya.



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AHSR – Annual Health Sector Statistics Report

ASL – Advanced Life Support

ARV – Anti-Retroviral Medicine

CGTRH – Coast General Teaching and Referral Hospital

DHIS2 – District Hospital Information System 2

EDL – Essential Drug List and in vitro Diagnostic

EHS – Essential Health Service

EMS – Emergency Medical Support

ERP – Enterprise Resource Planning

HAI – International Health Aid

HRH – Human Resource for Health

ID – Identification Card

IT – Information Technology

KEMSA – Kenya Medical Supply Agencies

KHFA – Kenya Harmonized Health Facility Assessment

LDH – Local Health Department

LMIC – Lower and Middle-Income Countries

MDG – Millennium Development Goals

MOH – Ministry of Health, Kenya

NACOSTI – National Commission for Science, Technology, and Innovation

NEML – National Essential Medicine List

NHIF – National Hospital Insurance Fund

NHS – National Hospital Scheme

NIIMS – National Integrated Identity Management System

OOP – Out of Pocket

SDG – Sustainable Development Goals

SEM – Structural Equation Modelling

SPSS – Statistical Package for Social Sciences

TB – Tuberculosis

UHC – Universal Health Coverage

UNICEF – United Nations Children's Fund

UPI – Unique Patient Identification

WHO – World Health Organization

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter introduces the background study of the proposal, the statement of the problem, the study objective, including the specific objectives, the research questions, the justification of the study, and finally, the study limitations and delimitations.

1.1 Study Background

Healthcare is a fundamental human right, and every country works to improve the effectiveness of its healthcare organizations so that everyone can access better medical care. Approximately fifty percent of the world's 7.9 billion people still do not have access to basic health services. This number could reach 5 billion by 2023. There is a chance that plenty of individuals in developing nations won't have access to medical care. Essential healthcare services include those that prevent, cure, promote the health of an individual and also include rehabilitative and palliative care. After the COVID–19 pandemic, several factors have continued to impede access and utilization to healthcare such as organizational practices, financial constraints, ethnic and cultural issues, as well as lack of medical supplies (Clay et al., 2021). To utilize essential health services, organizational practices, health financing, skilled workforce, health commodities, and hospital infrastructure should be available for the provision of healthcare service delivery.

According to the World Health Organization, the above-mentioned factors contribute to accessing healthcare systems (WHO 2010). Organizational practices reflect the trust the population has in ensuring the delivery of healthcare systems for preventing and better management of their illness. Organizational practices are also demonstrated by the policies and processes developed by the healthcare facility stewardship in implementing the functions

of the health systems. Healthcare delivery systems need to have financial resources for their performance, which is a key determinant in terms of quality of care, equity, and efficiency. The techniques used for garnering the resources that deliver the necessary services are included in the field of health financing. To ensure the delivery of vital essential medical services, a skilled health workforce is required. The use of necessary healthcare delivery is fundamentally dependent on the supply, demand, and accessibility of critical medications, supplies and hospital infrastructure. At multiple tiers of the medical sector, communication and information management are crucial for data collection that supports decision-making processes. It also acts as a manual for monitoring and evaluating peripheral and essential policy advancements of crucial healthcare systems and their use (WHO 2010).

The use of vital essential medical facilities is another primary objective of the research, including the aspects which touches on the health system components from organizational and managerial sustainability, quality assurance processes, resources, and the human resources, which directly or indirectly affect the essential service delivery and utilization (WHO 2010). However, the aim of this study is to identify the variables affecting the use of fundamental essential services in Mombasa County, Kenya. The basic services known as "essential services" are given top priority and concentrate on preventing and treating conditions like tuberculosis (TB), HIV/AIDS, maternal and newborn health problems, injuries that are prevalent, malnutrition, and situations of urgency (Alwan, Yamey et al., 2023). To improve health service delivery, essential services are often prompted in an effective and efficient way. Accessing high-quality delivery of services at all tiers of the healthcare system is necessary for ensuring the provision of essential health packages to the public (Ministry of Health, 2018). At the hospital level, the implementation of packages has increased because of the NHIF scheme, but there are various perspectives and projections of

what the packages can provide in terms of essential health. Additionally, it should be noted that the availability of necessary medical services does not ensure that patients will use them in the best feasible way (Alwan, Majdzadel et al., 2023).

Critical medical services are regarded as a successful and cost-effective way of enhancing the delivery of health services on a global scale. Globally, there is a renewed discussion about packages, leading to new understanding and prospects of what will be contained in the essential packages and their utilization. WHO has placed emphasis on the delivery of vital essential medical services at the regional level as well as their connections to larger medical problems. WHO has recommended indispensable wellness service design issues and alternatives to countries depending on their economic status and structure of their existing health systems (WHO, 20211b). For instance, a list of healthcare facilities and medical services offered at the primary and/or secondary care levels might constitute a fundamental health service in a low- or middle-income nations country (LMIC). In addition, the value (cost) in terms of these packages is important to ensure what goes beyond expectations and should be feasible for implementation within its budgets (Gaudin et al., 2023). While in richer countries, the essential healthcare packages are set out to what contents to exclude from the package. Different countries have different variations of essential health services depending on the economic, epidemiological, and social conditions. Additionally, there are 'partial' vital medical facilities for specific demographics or diseases, such as HIV/AIDS prevention, mental health treatment, and maternal and infant health strategies (WHO, 2010). There should be planned monitoring and evaluation of all essential healthcare packages which are aligned with global universal healthcare coverage (UHC). Policy guidelines are set up, right from planning stage to delivery of essential services and its utilization. However, this is still lacking as health information system structures and processes are not aligned, which should

have indicators on service coverage and utilization (Danforth et al., 2023). Access to and utilization of health services are key to improvement of health outcomes in low- and middle-income countries (LMICs). In these countries, knowledge of access to and utilization of health services is important in planning for health resource allocation to different levels of the health system and monitoring the achievement UHC, which the WHO advocates to ensuring equity in the use of health services. Furthermore, knowledge of barriers to health service utilization among the populations is essential in informing the design of interventions aimed at increasing use of essential services. (Jacobs B. at el., 2012).

Most people with high incomes can afford thorough individual insurance from privately owned businesses, but those who are poor cannot afford basic healthcare or its use. While the national average poverty rate is 47%, Mombasa county's poverty rate stands at 44% (UNICEF, 2019), making co-payments a main hindrance to access to essential healthcare and promotes inequities among the poor population (Garnelo et al., 2020). Mombasa is not far behind in several basic infrastructures, particularly electricity and water sources. Only 42% of households have electricity, compared to the national average of 73% (World Bank 2022). Therefore, the population fails to seek much- needed care and struggles to afford three meals a day. According to WHO (2002), It should be mandatory for the public to receive and use essential health services, such as those related to family health (pregnancy, the delivery process, and new-born care, postpartum care, contraceptives, the well-being of children, and immunization), non-communicable infectious diseases, and transmissible infectious illnesses (TB, HIV/AIDS, and sexually transmitted infections). Thus, it remains the only option for Mombasa County to address its health challenges and high child mortality rates, of which Mombasa County stands at 33/1000 live births. To ensure reasonable provision of amenities in Mombasa County, it is important to investigate factors that affect the delivery and usage

of vital medical services. This will ensure strengthening of healthcare delivery through increased utilization of indispensable essential healthcare services.

1.2 Statement of the Problem

In 2010, the Kenyan constitution declared health to a universal right, there is little progress towards the UHC in Kenya. On Utilization of essential health services, there is inadequate information on uptake among the population. Healthcare services are inequitably distributed according to the ability to pay rather than the need for healthcare, according Chuma J, at el. (2012).

Optimal use of essential healthcare services is not guaranteed by patients even if these services are available. Utilization of essential healthcare services can be made accessible when factors influencing availability of these services are in place. Around 16% of Kenya's population is estimated to be below the national poverty line (Statistica, 2023). According to the Annual Health Sector Statistics Report (2021), communicable diseases were responsible for 49% of lost healthy life-years, and non-communicable diseases accounted for 44%, an increase from 36%. The overall mortality rate for children under the age of five is about 39 per 1,000 live births. Contributing factors include the number of skilled healthcare resources providing essential healthcare services, such as maternal and well-baby services. However, for the wealthier 20% of the overall population, this number drops to 21 per 1000, while for the poorer 20%, it rises to almost 74. According to the most recent statistics, Kenya has an overall healthcare utilization rate of about 73.4% among individuals who are ill, indicating that many people have unmet needs for expensive medical care but do not seek treatment (Njagi et al., 2020). 12.7% of Kenyans who fall ill but decide not to seek care cited financial barriers as their reason and lack of medication provision when healthcare services are sought.

Accessibility was a problem for a further 16.2% of people due to the location of the closest medical facility for those who live very far. (Annual Health Sector Statistics Report, 2021). One of the main causes of the low utilization in Mombasa County is the lack of availability essential medical services. The infant mortality rate is still at 57 per 1000 live births and the under-five mortality rate is still 32.3 per 1000 live deliveries (Department of Health Services, 2018). People in Mombasa County cannot continually look for medical care without running the risk of facing a financial burden due to the county's poverty rate, which stands at 44% as opposed to the national average of 47% (UNICEF,2019). Mombasa County's rate of maternal mortality has been projected to be 195 per 100,000 babies born alive (Department of Health Services, 2018), which is lower than the Kenya target of 355 per 100,000 live conceptions but still higher than other regions in Kenya like the north-eastern and eastern regions (United Nations Population Fund, Kenya, 2022).

Therefore, one way to reinforce the delivery of essential services and increase access and utilization to healthcare is to identify the factors that affect the delivery of essential services. Coast general teaching and referral hospital (CGTRH) is the largest hospital in Mombasa County and serving the population of the county and coast region as well. It has approximately over 800 healthcare workers with bed capacity of 400 and affiliated training programs for healthcare students. The hospital serves over 500,000 people within the service area of Mombasa County. The Hospital was decentralized by the Ministry of Health and a board of trustees were appointed to govern to achieve autonomous status.

Tudor sub-county hospital is in Mvita constituency and is the nearest facility within easy locality in Mombasa County with a 25-bed capacity of around and an approximate of 80-100 healthcare personnel.

1.3 Purpose of the Study

Essential health services consist of primary healthcare services such as maternal and child welfare, immunization programs and the prevention of common diseases. WHO defines Primary care as 'a model of healthcare that supports first-contact, accessible, continuous, comprehensive and coordinated person-focused care. This form of health provision is available to patients at the pyramid base of healthcare and should be accessible to the population. It entails the provision of both primary and secondary prevention causes for communicable and non-communicable diseases in the community. Essential healthcare is vital, as it meets the demands of the population who are sick. After the Covid 19 pandemic, there is need to strengthen the essential healthcare services with the emergency of the NCDs and new infections as a health problem. (WHO 2019)

The goal of this study is to enhance the accessibility and utilization of crucial healthcare services. It will offer suggestions on how to improve delivery, resources such as healthcare workers, drugs and supplies, and access to critical medical services. Additionally, the results will offer policy recommendations on how to improve use of healthcare, particularly among the most vulnerable and impoverished population, and ensure that people have access to affordable fundamental medical services which can be used for their optimal care.

1.4 Study Objectives

1.4.1 Main Objective

To establish the factors influencing utilization of essential health services in CGTRH and Tudor Sub- County public hospitals in Mombasa County, Kenya.

1.4.2 Specific Objectives

1. To determine how human resources for health influence utilization health services at the Coast General Teaching and Referral Hospital and Tudor sub-county hospital in Mombasa County.
2. To examine how availability of drugs influence utilization of essential health services on Coast General Teaching and Referral Hospital and Tudor sub-county hospital in Mombasa County.
3. To identify the role of health infrastructure in the utilization of essential health services in Coast General Teaching and Referral Hospital and Tudor sub-county hospital in Mombasa County.
4. To evaluate the relevance of organizational practices in the utilization of essential health services in Coast General, Teaching and Referral Hospital and Tudor sub-county hospital in Mombasa County.

1.5 Research Questions

1. What is the influence of human resources for health in the utilization of essential health services in Coast General Teaching and Referral Hospital and Tudor sub-county hospital in Mombasa County?
2. What is the influence of the availability of drugs in utilization of essential health services in Coast General Teaching and Referral Hospital and Tudor sub-county hospital in Mombasa County?
3. What is the role of health infrastructure in the utilization of essential health services in Coast General Teaching and Referral Hospital and Tudor sub county hospital in Mombasa County?

4. What is the relevance of organizational practices in the utilization of essential health services in Coast General Teaching and Referral Hospital and Tudor sub-county hospital in Mombasa County?

1.6 Study Justification

An article published by Jacaranda Health highlighted in a report in 2021, due to caseloads of patients at Tudor subcounty hospital, which led to inadequate staffing who were unable to cope with the numbers (Jacaranda Health, 2024). This article published the report of the decrease in human resource to handle patient volume in most public hospital in Mombasa County after a data driven analysis report by county reproductive health worker. Another case study reported was on a study on TB diagnosis at Tudor subcounty which had revealed that low utilization of testing diagnostic service (22%) was partly due to procurement supply chain challenges and data missing from patient records (AcquireFrontline, 2024).

Another data showed that an increase in maternity service utilization, being one of the essential healthcare services, after implementation of policies and guidelines in Mombasa County with the adoption of free maternity services introduced (Bourbonnais, N, 2013).

This study was crucial because it investigated the variables affecting Mombasa County's use of crucial essential medical services. The effectiveness of human resources management for well-being (HRM), healthcare amenities and the availability and accessibility of drugs, medical supplies and equipment were all examined as important factors in ensuring the provision of vital medical services and their utilization. The findings provided vital recommendations on how to improve the factors associated with both the delivery and utilization of essential health services. While essential health services are increasingly seen as useful in health policy that strengthens service delivery, it has not been fully addressed as

a mechanism of improving access to health services in many countries. This study took on this opportunity to address factors influencing the delivery and utilization of essential health services, as one example of essential services is the provision of maternal and child health services with the statistics on high maternal mortality rates (195 per 100000) and high child mortality rate (91 per 1000 live birth) (Alwan, Majdzadeh et al., 2023). The investigation also examined the importance of elements like staff competency, availability of drugs and medical supplies, and access to medical equipment and infrastructure of healthcare facilities, for effective service administration and consumption.

1.7 Study Limitations and Delimitations

1.7.1 Study Limitation

The investigation was carried out in two major (tier 3 and tier 2) public hospitals, namely Coast General Referral Hospital and Tudor Sub-County Hospital. These hospitals were chosen due to the fact that CGTRH is the referral Centre in Coast region and Tudor Sub-County is closely following due to the hospital being in close proximity in terms of accessibility in Mombasa County, leaving out the other public facilities, private hospitals, health centers and dispensaries which offer services in various locations within Mombasa County, and hence data can be generated for these two hospitals. In addition, both hospitals offer a range of essential services, thus studying the factors influencing utilization of these services from these two sites can provide useful data.

Challenges encountered included unwillingness of the health-work force to answer questions, unavailability of key respondents, getting the correct sample size due to huge workforce among the two hospitals and fear of victimization, when patients were approached as well as

lack of similar study in Coast region to provide past historical data, enough data on organizational practices within the two hospitals.

The study's weakness included the assumption that the information given by the respondents was correct and the observations were a true rumination of the study area. It was also assumed that the data given was a true replication of the veracity on the ground, for the selected two hospitals.

Past studies done were as follows; analysis of effectiveness of free maternal health policy utilization and financing of health facilities in Mombasa County by Khadija Shikley (2016).

1.7.2 Study Delimitations

The research was delimited to the two hospitals within Mombasa County and comply to adherence to ethical guidelines set by Mount Kenya University and NACOSTI and conduct the research within the two hospitals. Data was obtained and collected from the respondents i.e. healthcare workers and patients who participated in the study within the two public hospital. Data was restricted to the four variables that were indicated as per the objectives.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the various factors influencing the utilization of essential health care services. It investigates factors, such as the influence of human resources, the health workforce numbers, staff job satisfaction and competencies of human resources. It also examines the effects of stock out of drugs, availability of drugs and hospital medical supplies, procurement processes, role of health infrastructure, facility maintenance system, ambulance services, availability of medical equipment and importance of organizational practices. Furthermore, it delves into aspects such as the flow of health information, consultation process, patient waiting time, financial resource allocation, patient satisfaction with essential health care, affordability of essential healthcare, accessibility and utilization of essential healthcare services.

It also investigates the conceptual framework on the factors which have a bearing on the study depicting how the variables are interrelated with the indicators that affect them.

Strengthening essential health services for optimal utilization is crucial in the achievement of equity in health and towards UHC Vision 2020. Previous studies have cited strengthening essential health services as an effective way to achieve efficient service delivery (WHO, 2010).

However, implementing these essential service care packages continues to be a challenge due to the gaps in the healthcare process system. Murray & Frenk (2000) cite that competency of the health workforce, availability of medicines and medical supplies, and economic access to indispensable well-being services are key factors in the provision of vital services and utilization. In addition, many emerging nations are still grappling with the effect and challenges to overcome the disruption and recover from the after-effects of the Covid 19

pandemic claiming that simply making a fundamental medical service available does not suffice and that active monitoring of utilization is necessary to ensure that the service is fulfilling its goals. Monitoring and tracking of essential health services should be enhanced by policy makers to mitigate health systems bottlenecks especially after Covid-19 pandemic and real-time data collection methods to be implemented and evaluated. WHO developed 'pulse surveys', which can be used to assess the consistency of vital medical services and find any obstacles to achieving the goals (WHO, n.d.). Examples of these pulse surveys have been implemented in Afghanistan, and the findings suggested that the pandemic had disrupted 10% of these amenities in early 2021 and 65% of vital medical facilities by early 2020. The first three separate waves of Covid-19 in Afghanistan occurred during the times when the surveys were conducted (WHO, n.d.). The Pulse surveys did not collect data from specific health care facilities because they were intended to be given to key informers or management team members, frequently at a senior level, with responses based on what they discovered.

2.2 Effect of Health Workers in the Utilization of Essential Medical Services

Resources are needed to provide the necessary service. Planning and implementing crucial medical care necessitate bringing in fresh funding or diverting funds from certain current treatments, programs, or facilities. To accomplish this, resource allocation, decision-making, and budgeting must be "linked into" the execution of vital medical services. Health professionals with training in a variety of medical specialties are required for the delivery of essential services. WHO defines this staff as Human Resources for Health (HRM), which encompasses everyone involved in activities whose main goal is to improve health. Nurses, physicians, pharmacists, laboratory technologists, and clinical professionals are among this

group. These have direct contact with patients. There are others such as health system managers, medical record officers, housekeeping personnel, biomedical engineers, health economists who are not directly linked to one- on -one contact with patients but are indirectly linked to health care delivery and are important in health systems functioning processes. Personnel who are responsible for organizing and delivering health services depend on their skills, knowledge, motivation, and deployment, for a county to meet its health goals (Gantz et al., 2012).

2.2.1 Number of Health Care Workforce

Health professionals are an essential pillar for an operating health care system. Health professionals have historically received less consideration when discussing how to improve vital health care systems. Currently, there is a global shortage of approximately 3.05 million health professionals. A minimum of one million healthcare professionals and 350,000 midwives are urgently needed in communities, among other things. The training, resources, and aid needed by up-to-date health professionals to perform their duties are lacking. Despite bearing 5% of the global disease burden, the WHO projections that sub-Saharan Africa only has 1.3% of the globe's trained health care workers. In 2015, there were only 1.3 medical professionals for every 1000 people in Africa, significantly below the 4.5 per 1,000 required to achieve the goals of the Sustainable Development Goals (SDGs). Despite progress, Africa has the direst need for health care professionals, with an anticipated shortage of 6.1 million by 2030. This is in comparison to the 14.5 million needed globally for UHC and SDGs (Amref Health Africa 2022).

The accessibility, acceptability, and availability of health-related workers can improve the coverage of fundamental medical services and ensure that all individuals have an equal

opportunity to the greatest possible level of health. WHO projects a 10-million-person shortage in health employees by 2030, primarily in low- and middle-income nations.

The SDGs and MDGs are global goals that, by 2030, seek to combat AHIS/AIDS, malaria, and non-communicable ailments such as cancer, neonatal mortality and improving maternal health. The training, employment, launch, retention, and performance of medical professionals in developing nations will be impacted at all socioeconomic levels and will face a range of challenges. Both industrialized and emerging countries have been affected by the human resources crisis, but the world's poor suffer unjustly because they have considerably fewer healthcare employees and far greater needs. Africa has 36 out of the 57 nations with critical human resource shortage. Reports from 55% of WHO member states that there are less than 40 midwifery and nursing personnel per 10,000 population and about 23% report to have less than 10.50% of the national health workforce constitute to be nurses and midwives in many countries. By 2030, it is estimated that there will be a reduction from 9 million to 7.6million in terms of shortages of nurses and midwives. However, in Africa and Eastern Mediterranean regions, the shortage will worsen (WHO, 2019a).

By reducing the supply of vital medical care, a shortage of medical personnel can impede access to services. This is prevalent in the countryside. To achieve the minimum goals in essential health service delivery and utilization, health care practitioners need to develop a culture of competence. "Cultural competency" in the context of health care refers to a system's capacity to deliver services while considering into account the principles, views, and actions of different individuals as well as their surroundings, culture, and linguistic needs. Cultural awareness is characterized by experts in this field as an advertising strategy to draw in new customers and market share as well as a means of increasing access to high-quality care for all patients, regardless of their ethnic background, socioeconomic status, or

religion. Expertise for health care professionals includes clinical abilities in areas such as wellness instruction, counseling, and evaluation and treatment of patients. Lack of proficient medical professionals directly impedes the provision of vital health care services because competency in managing health care demands skills in oversight, training, and problem-solving. Many people who need health care are compelled to reschedule appointments or look for treatment somewhere else due to a lack of qualified staff.

Before 2018, WHO estimates that the African region employed 1.56 million health care professionals, or 3% of the world's total workforce. The number of medical professionals in Africa increased by 129% in 2018 to 3.57 million. Due to adjusting for the increase in population and a resulting actual increase in the density of medical personnel of 4.7% annually, this is only a 61% improvement over the previous 13 years. Despite this boost, there are 15.4 medical professionals, nurses, and obstetricians per 10,000 people in the region as opposed to the 44.5 required to achieve the average rank of the SDG tracer indicators. As a result, only 34.6% of the needed physicians, nurses, and obstetricians are found in the African continent. According to projections, the African region is expected to require 6.1 million additional physicians and nurses by 2030, especially on the clinical side. However, if things continue as they are, only 3.1 million would have received the necessary training and been prepared to provide medical services. For the region of Africa to provide the most fundamental medical care and address the current shortages, 3.0 million additional health care professionals would need to be trained and educated by 2030 (WHO, 2021a).

The number of health care workers will need to be increased, which will require significant expenditure on both human and financial resources. It will also be necessary for institutions to have the capacity to produce more health care specialists. The lack of training resources, learning materials, qualified providing instruction faculty, and insufficient infrastructure and

surroundings for both educational and residential facilities for students and lecturers hinders the generation of qualified medical workers in Africa. The challenge of providing health professionals with quality training is another (Asamani, et al., 2019).

2.2.2 Staff Job Satisfaction

Professionals in health care include prescribers, nurses, midwives, dental professionals, medical laboratory technologists, pharmacists and many more based on international standard classification of health care occupation.

With evidence-based medicine and treatment, medical professionals maintain the well-being of people. Job satisfaction is a sentiment that gauges a worker's behavioral and cognitive responses to the tasks completed. According to a WHO report by Abate & Mekonnen (2021), there will be a shortfall of 12.9 million medical personnel in southeast Asian and African regions by 2035 (47% and 25%, respectively), and 1% in Europe. According to the report, due to low pay and fewer incentives, about 40% of medical professionals worldwide will quit their jobs in the upcoming years, which will have an impact on the global population's access to medical care. Due to internal and international medical professional emigration, there is and will be an imbalance of medical professionals in national and local locations.

After the Covid19 pandemic, health care workers' mental health was severely strained, so it is essential that they are happy in their jobs to improve patient adherence to medication, care quality, and satisfaction with the use of vital medical services (Barili et al., 2022). Organizational factors have been identified to influence nurses' job satisfaction regarding their tasks. Lu et al. (2021), reported in a past review on nurses' job, numerous elements, including interactions with patients, conditions of employment, job requirements, and procedures for organization, have a significant impact on a nurse's job satisfaction. Van

Bogaert et al. (2013), added, the environment in which the nurse executes their duties such as nurse care management at the units, relations between nurses and other health care workers e.g., physicians, laboratory technologists, pharmacists, and institutional support do have an influence on job satisfaction. In another study, Laschinger & Fida (2015), used a structural equation modeling (SEM) method, which states that while short staffing directly lowers medical professionals' contentment and performance, other work conditions, such as being empowered, competence, and astute leadership, have a positive impact on how content they are with their jobs. In another study, it was found that promotion of nurses' job satisfaction reduced turnover of nurses and improved quality of patient care. Many health facilities have introduced guidelines and manuals on patient safety and health care staff are oriented towards these. Such initiatives and measures increase patient safety and may enhance the quality of nurses' jobs, yet at the same time, lead to more stressful moments as many may have anxiety of making mistakes in their workplace resulting to demotivation in their jobs (Inoue et al., 2017).

To enhance, achieve and maintain the best possible patient satisfaction scores, today every health care institution is investing to ensure patients return for more benefits when they have a positive experience. This is a financial impetus in achieving high patient satisfaction rates. Maintaining the continuity and quality of vital medical service delivery depends on the satisfaction of health workers in their jobs. Studies show that physicians and nurses in many nations, including Kenya, are less satisfied with their jobs. This is due to problems like strikes over unpaid bills and strict policies, which demotivate staff members and cause medical facilities to collapse. The level of satisfaction with the work of all health-related human resources affects the quality of health care. The quality of treatment is likely to be poor and consumer satisfaction ratings are anticipated to decline when few health care professionals

are providing services to a large population (Oloo & Wanzala, 2019). Signs of dissatisfaction with work include inadequate efficiency, medical treatment strikes, high turnover, frequent absenteeism, and potential industrial actions. Due to low patient turnover and the fear of receiving subpar care, there is a decline in the use of vital medical facilities (Senek et al., 2020).

2.2.3 Competency of Health Care Workers

Health care professionals and policymakers are challenged to develop health care systems that provide culturally appropriate medical care because cultural diversity presents novel possibilities and obstacles in every country. The ability of health care professionals and organizations to successfully provide medical treatments that satisfy the linguistic, cultural, and social requirements individuals seeking well-being care services is known as cultural competence. Equity in health care and the reduction of health disparities remain crucial global objectives. The eradication of disparities in health due to race or ethnicity can be facilitated by cultural competence, which is widely regarded as a functional pillar to decreasing disparities through a culturally appropriate and objective quality of health care. Providing appropriate training, tools, and regulations on cultural competencies and cross-cultural issues, reducing administrative and linguistic obstacles to patient care, and establishing an elevated probability of offering better and more efficient services where employees are proficient are a few examples of techniques to ensure that health care systems achieve these goals (Ferlie & Shortell, 2011). The ability, knowledge, and skills needed to provide patients with health care are possessed by competent health care professionals. When a patient is seeking medical assistance, an aspect of a medical worker can recognize their needs and provide those services in an efficient manner. In addition, competent health care

workers understand the procedures of service provision, and medical ethics within the provision. Incompetent staff have been associated with medication errors in the past. According to Ferlie & Shortell (2011), about 61% of wrongly administered medications are carried out by incompetent medical personnel. Besides, the Federal Ministry of Health, Ethiopia (2012), discovered a direct link between medical staff competency and the provision of health care in Ethiopia. It will be crucial to ascertain the connection between staff competency and the delivery and consumption of essential medical care in Mombasa County at that point. A handful of studies have also been done on cultural proficiency in LMICs (low- and middle-income countries). Cultural competence interventions were implemented in Malaysia to increase the efficacy and availability of medical care to individuals from ethnic minorities. These include interpreting services, training for the medical employees to provide care that is culturally appropriate, and migrant peer tutoring (Pocock et al., 2020).

2.3 Effect of Stock-Out of Drugs on Essential Health Services

While the topic of health coverage for everyone is still being discussed, it is crucial to acknowledge key goals like the availability of drugs and medical equipment in all health facilities. Drugs and medical equipment should always be accessible in through reliable systems. Since operational mechanisms can malfunction if there is an absence of such supplies, which results in the underutilization of essential health care, it is crucial to evaluate the buying cycle to ensure an effective distribution of drugs and medical supplies. Examples include patients receiving HIV/AIDS refills. experiencing faster progression of their disease if the drugs are not received in a timely manner.

Disruption in the EHS stocks, according to a study by Wagenaar et al. (2014) in Mozambique, influences the standard of patient care and can add to the workload of already overworked

health care staff because patients will need more visits or referrals to receive vital medical services. In rural health centers, these referrals or additional visits may contribute to low morale, further affecting quality of health services and hindering upscale of health programs. Due to lack of medicines at public hospitals, patient satisfaction was low, resulting in patients accessing health care services in private hospitals and pharmacies, which are more expensive. This led to utilization of traditional and alternative healers, as patient confidence in formal health care was undermined.

In another study in Tanzania, rural facilities get replacement of medicines and supplies from supervisors who visit these sites, thus if these visits are less, then medicine stock may be depleted. At the facility level, there are multiple factors cited such as errors in order patterns, inadequate funding, lack of staff, challenges in transport system, sudden demand of products due to disease surges, and a lack of rewards for stock management and upkeep (Penfold et al., 2013). The collaboration by WHO/Health Action International in 1998, generated notable data on availability and cost of drugs globally, whilst data is irregular at country level. Surveys conducted in households in Southern Africa, estimated that 20% of patients who visited hospitals received prescriptions due to unavailability of drugs (WHO, 2009). According to the vital medical care package, only 9% of the general population in Malawi are believed to currently have access to all the necessary medications and equipment (Mazengera, 2012). However, a survey conducted in Mozambique in 2003 revealed that many public medical facilities had run out of vital medicines six months prior to the survey (Republic of Mozambique Ministerio da Saude, 2012).

2.3.1 Availability of Drugs and Hospital Supplies

Affordability and accessibility of health care services to everyone are the overall goal of UHC. Thus, the essential drug list (EDL), availability in all health care facilities is necessary. This is in conjunction with drug efficacy and quality, which are important in public health systems to ensure patients receive optimum care and recovery. Cost efficiency, EDL, quality, and effectiveness of drugs are essential components of a drug delivery system that is both effective and efficient. The EDL and facility drug formulary are essential in demand planning for any given period, to ensure drugs are available. Other drivers include inventory management, which has a bearing on quantity and type of medicines available within public health facilities, and what needs to be bought. This affects procurement and planning variables like tendered standard stocking, stock-outs, local purchase and restocking of products. This will eventually affect patients' revisits for follow-up treatment for chronic health issues. Thus, the effectiveness of the procurement and supply chain will have an impact as patients gain confidence in the system and lead to utilization of essential health services.

This means that every step of the patient care pathway, in along with the readily accessible nature of medical equipment, has a sporadic condition of assigned budget and is aided by facilitators, including (a) the organizational framework of the procurement division, (b) the process of purchasing guidelines, (c) the supporting IT systems, (d) the whole medical facility, and (e) the availability of employees across the supply chain for health care (Sahu et al,.2022).

Medical centers should also have readily available testing supplies to help with diagnosis and the creation of effective treatment plans without jeopardizing patient outcomes. It's still a big problem that 47% of the global population only has sporadic access to medical care.

Accessibility to tests for diagnosis is essential to accomplishing UHC and SDG objectives. This is still a problem in Africa because delayed medical care and diagnosis are major factors in the continent's deteriorating health. To help with choosing and assigning priority of crucial diagnostics that correspond with national needs, WHO published the first vital in vitro diagnostic (EDL) model in 2018. To advance the UHC, the EDL links medications with tests for diagnosis as a complement to the EML. In the end, better patient outcomes are provided, and medical care services are used more effectively. This encourages equitable access to high-quality, reasonably priced diagnostic tests throughout the medical system. Developing nations should adopt and develop such lists on a national level, to suit their disease burdens and build capacity to ensure better patient outcomes and quality health care practice and utilization of essential health services. There are three EDL models published by WHO, presently. The first list had 11 tests and reviewed in 2019 by WHO to add nine tests for non-infectious diseases. There are more tests by 2020 including Covid -19. Such initiative by WHO since its first publication EML in 1977 to update the latest version in 2021 and the adaptation of the National Essential Medicine List (NEMLs), has resulted in the creation of tools for use in practice that support therapy regime recommendations. There are still many issues in Africa that continue to mitigate the effects of the EDL's acceptance and implementation, resulting in insufficient and unequal access to prescription drugs (Nyanchoka et al., 2022).

Particularly in LMIC, health care organizations continue to experience a severe lack of drugs and medical supplies, which results in the provision of subpar medical care. Estimates indicate that 90% of maternal deaths in developing countries, particularly among women in rural areas, are due to insufficient access to maternal health services. A supportive environment, authorized health care professionals with the ability to obtain drugs, and

medical equipment that are easily accessible in sufficient quantities when required are all necessary conditions for ensuring the delivery of high-quality health care services (Penfold et al., 2013).

Multiple strategies can guarantee there is never a stock out of medications and medical supplies for timely availability for maternal health. The management of the system that delivers drugs needs to be closely watched. Responsibility, transparency in the management of data and drug funds, and the involvement of key stakeholders in decision-making on fund distribution are all essential. This will guarantee a sufficient supply of medications and medical equipment.

2.3.2 Procurement Process

Health supply chain trends continue to evolve, emphasizing provider-supplier alliances, patient care beyond acute settings, reduced remuneration levels, and the integration of electronic health records (EHRs) with other healthcare business models. To ensure leaders can make informed and quality decisions, there is a need for quality data provision. This means that accurate information for gathering and data for procurement process is required for analysis purposes. To ensure cost effective health care management, and a focus on cost to serve strategic goals, precise data is a footing anchorage for understanding the costs for procedures and the relationship to desired clinical outcomes. System interoperability is the block required to ensure process of data flow is smooth. Thus, data can then be shared across the many levels of the hospital process systems, thus process of procurement for required products purchase are systemized once the supply and demand side relationship are understood.

In today's age, there is an impediment to today's health care ability to respond quicker to an ideal ever-changing state as there is still a lack of uniformity in standardized data. Information is required to be better equipped to know the complete costs of procedures by health providers, to ensure to deliver quality patient outcomes. The health care industry faces the same supply chain challenges as other industries. Although governments have been given a body to handle the procurement, storage, and distribution of medical supplies for the public sector, such as Kenya's KEMSA, the entire supply chain is still dispersed and still done by hand. There is limited access to timely vendor data, making hospital facilitators engage on vendors on a one-off basis as the need arises, rather than floating a tender and using a prequalified and vetting pool of potential vendors.

The Kenyan government embarked on ensuring to formulate the essential health medicines to be available through KEMSA and all health facilities to be supplied as per requirement (Aronovich & Kinzett, 2001).

The system of open tender is the ideal way to ensure to get affordable prices of essential drugs and other medical supplies/ devices, which will make essential health care affordable and efficient utilization.

The Mission for Essential Drug Supplies (MEDS), a nonprofit organization, also provides hospitals of all kinds with essential medical supplies, particularly HIV/AIDS medications for treatment continuity, via the WHO approved generic platform. The organization also participates in open tenders and ensures affordable drugs and medical supplies are quoted. A case-study was undertaken in 2020, in conjunction with WHO (MED, 2020).

Procurement cycle management, if adopted in a holistic way, can help health care facilities achieve their goals in three high value ways: in cost reduction, streamlined workflows and improved regulatory compliance in providing essential health care services. However, many

facilities stock drugs that do not meet the needs of the patients, while others lack the commonly required drugs. In many cases, patients are asked to buy drugs from outside due to stock out. People often shy away from attending such facilities. Accordingly, the hospital supply chain needs to be evaluated to ensure to stock what is required to meet the needs of the patients. There are cases where a lot of drugs go to waste due to expiry without even being used. This means that such facilities have too many stocks of what is not required, and minimal stock of what is needed. It is, therefore, necessary that facilities have re-order levels for medical supplies consistent with the needs of the population they are serving.

According to a proposal made by WHO, everyone should have access to and use basic health drugs in the proper dosages. WHO estimates that nearly a third of the world's population still cannot access vital medicines. The access to health care and utilization is still not met due the obstacles of high cost of essential health services despite health policies enacted to address the high levels of expenses. In 2002, WHO and the International Health Action (HAI), published a manual which describes standard methods to gauge drug prices and assist policy makers identify clearly cost prices and any gaps in their policies. This will ensure all health facilities at all levels have cost effective medicines especially for the treatment of common diseases and high incidence (WHO, 2002).

In another study, by Zeng et al., (2021), it was found that shortage of funding was one of the challenges faced by counties in Kenya, which contributes to inefficiencies in health system. The prompt purchase of necessary medicines and medical equipment was also affected by the delay in the payment of funds for health care organizations, which halted the population's access to and use of essential services. The absence of autonomy in the purchase of goods and medical equipment, which had an impact on service quality, was another obstacle for employing necessary health care needs. Other factors include lack of proper diagnostic

tools and equipment for laboratory tests, sonography investigations, rigid procurement and supply chain policies, lengthy procurement process, and unwillingness to join the health insurance schemes such as NHIF, lack of staff motivation and poor economic status of the population.

2.4 Role of Health Infrastructure in Essential Medical Service Delivery

At all levels, public health services must be provided and carried out with the help of appropriate medical infrastructure. During Covid19 pandemic, it came to the attention of health care professionals, any health emergency and response to any threat whether acute or chronic, for a nation, a strong infrastructure is vital, necessary and the capacity to address any emergency. To contain the virus and ensure patients don't contact the virus within the premise of health facilities, there were several cancellations of essential services.

A hospital infrastructure is a basal foundation needed for planning, delivering, and evaluation of public health concerns. Maintenance systems, hospital rooms, medical devices, ambulances, technological and communication systems, services, admission and discharge mechanisms, and the structure itself are all types of medical infrastructure. Health infrastructure creates tools to build local health department (LHD) infrastructure, which can provide health services when and whenever they are needed. (Ministry of Health, Uganda, 2020).

According to a study by Karuri et al. (2014), health care institutions need to have enough room to build wards, operating working theaters, emergency vehicles, high-quality medical equipment, and efficient channels of communication and structures to deliver any medical services efficiently. An example is the DHIS2, started by the Ministry of health in Kenya, a

reporting tool, which has become essential on health data collection, analysis done to get information on how utilization of health services is traced back and effected.

In another study conducted during the Covid 19 pandemic by Bekele et al. (2022), it showed how health facilities have had to change their process and measure to ensure wards are accessible during Covid 19 period in such a way to minimize movement of patients and staff. Due to admission, mostly of Covid 19 patients, most of the time the wards were overfull and overstretched, yet healthcare services for other cases such as antenatal clinics and family planning clinics had low utilization of these services as these services has minimal access.

When Kenya adopted the UHC as a top priority agenda by 2030, with the goal of ensuring that all citizens should have access to quality health care without financial burden. It called for effective, comprehensive, and efficient health infrastructure development. Access to quality health care services and those essential ones can connect people to health facilities which have good infrastructure. According to the KHFA 2018/19 report, indicators such as facility density and bed density form the bases of the Kenya infrastructure. The figures are: 2.2 per 10000 population with geographical disparities between counties for national health facility density, 13.3 per 10000 population for inpatient bed density and bed occupancy rate at 46% but a variance between counties. To help achieve UHC objectives, it is crucial to maximize the present facilities (Ministry of Health, n.d.).

2.4.1 Facility Maintenance Systems

Excellent hospital infrastructure is vital for quality service delivery and achieving desired health outcomes. Hospitals require an efficient maintenance system to keep the facilities in working condition. Hospital beds and medical equipment require frequent maintenance and preventive checks to remain functional in the long term, However, this is not the case with

many health facilities. Most medical equipment has become obsolete and abandoned in the stores. Ward rooms, for instance, are hardly renovated and ambulances are parked and non-operational without any maintenance. According to Palmer (2011), facilities need an effective maintenance system to continue to operate. Funds are allocated for buying new equipment, yet those within the facilities which could be repaired are decommissioned. It is essential for hospitals to maintain their equipment to ensure it is operational, to provide essential health care services required for patients. People would shy away from health facilities without proper maintenance systems due to possible hospital acquired diseases resulting from unmaintained medical equipment.

After the Covid 19 pandemic, and introduction of numerous technologies on medical equipment, many health facilities' approach to managing medical equipment is comprehensively having a professional and responsible head of department. This ensures appropriate and required medical equipment is available, functioning and fit for the purpose intended to achieve quality clinical services. As a result, every stage of the lifespan of medical supplies is carefully examined, from the product requirements and specifications to the evaluation of competing bids, the procurement procedures, the warranty, the maintenance period, the process of decontamination as well as quality assurance procedures, and the disposal strategies to pay for equipment replacement. The lead charge should ensure that new technologies which are appropriate and in line with clinical services are introduced and evaluated on a periodic basis and are factored in budget proposal for updated service development plans for health facilities. Risk management, associated with medical equipment, should be undertaken within the health facility framework and should include responding to adverse incidents.

2.4.2 Ambulances

'Ambulare' is the Latin word, which in English is the term 'ambulance' and means 'to walk or move about'. It depicts a type of vehicle which is used to ferry injured or sick patients from locations to health facilities to receive treatment. Ambulance services have developed recently and have become central in health care systems in the world. An efficient ambulance service prioritizes resources effectively and contributes to a decreased patient mortality rate, leading to better health outcomes. This part of ambulatory care, still also subjected to budget constraints due to increasing health care costs and demands. Different counties have different approaches and protocols for ambulance services. The different designs in each country are subject to change over time and due to different channels, geographical terrain, scenarios, and financial resources. In some European nations, ambulance services are referred to as lifesaving services and call for a doctor or nurse who has received sophisticated life support (ALS) training. In United States, and Australia, ambulance services are manned by paramedics. The developed nations in Asia, including Japan, Korea, and Singapore, have more organized medical services for emergencies (EMS), also known as ambulance delivery. The Ministry of Health in Malaysia sought to assess the effectiveness of ambulance services offered by hospitals in an investigation by Mohamed et al. (2023), and the results demonstrated that the ambulance program is a crucial component of the pathway for providing medical services and requires monetary resources. In Malaysia, the ambulance services have been available as a pre- hospital service for quite some time. A wide range of utilities is covered starting from basic transportation of patients, provision of first aid and basic life support to advance life support. Although there are numerous organizations that offer ambulance services, including St. John's Ambulance and the Malaysian Red Cross, the Ministry of Health (MOH) of Malaysia is the main one. As seen above, an effective

ambulance service is vital for medical care delivery systems and lowers the general population's mortality and disability rates when an emergency occurs. Ambulance services are deemed more effective if the maximum output is produced with the budget allotted, and inefficient if the ultimate output is not produced.

There were more calls for emergency services because of diseases arising during the Covid 19 pandemic. There was a need for quick, precise detection, appropriate clinical care and decision-making, and emphasized emergency services. In Scotland, it improved physician-led support for decisions and pre-hospital clinical recommendations to recognize and transfer decision-making to individuals showcasing with Covid 19 symptoms (Fitzpatrick et al., 2022).

There are many instances where emergency calls can arise and need a medical response, otherwise the condition can worse, thus ambulance services are essential in every society. Immediate first aid attention provided by the ambulance team can prevent irreversible medical conditions. There are designated points where ambulance operate from, such as hospitals and emergency control centers. Such services help in giving quick treatment and stabilize the casualties that can lead to preventing more injuries and prevent serious medical complications, before rushing to hospitals. All the ambulance team get trained in handling emergency procedures such as profuse bleeding, cardiac arrest and falls, car accidents etc. Ambulance services are very useful, in quick transportation of victims from scene of accidents to health facilities, especially for long distances. Also beneficial in areas that have been hit by disease outbreaks or other serious disasters such as the recent Covid 19 pandemic, war zone areas etc.

Ambulatory services are significant in the delivery of emergency cases. Many accidents and injuries occur in distant places far from health facilities, and medical evacuation can only take place where ambulances are available. Without operational ambulances, it may be too late for many lives in the event of an accident.

Many facilities have stalled ambulances within the hospitals and are non-operational. According to the Annual Health Sector Statistics Report (2021), only a handful of health facilities have ambulances which are operational, leading to poor medical responses in case of emergencies. In an investigation done in Machakos municipality, Muchiri et al. (2018) discovered that emergency medical services were difficult to access, as the ambulance vans required upgrading, in addition to running costs for ambulance services being high. There were other factors such as map direction for picking up victims, staff training in emergency first aid care and BSL, operational costs and delayed ambulance arrival time leading to a high mortality rate.

2.4.3 Medical Equipment

Health care equipment is any device, instrument, apparatus, or machine used for prevention, diagnosis, treatment, or rehabilitation. It might be used to determine, quantify, repair, or alter the makeup of the body for a variety of medical purposes. A medical instrument can work independently or in conjunction with other devices (WHO, 2017). Single use devices, implants or disposable devices are not classified as medical devices. Health care systems within the globe are grappling with the problem of figuring out how to manage the delivery of health care due to resource limitations. Thus, the availability of medical equipment can enable effective and efficient health service and utilization of the same. Therefore, a lack of working medical equipment in poor resource settings can have a downward effect on health

care. Many facilities in developing countries have broken medical equipment with an estimate range of 96% out of service, including laboratory equipment (Ademe et al., 2016). The Kenyan government wants to guarantee that all citizens have access to high-quality health care at an affordable price while shielding them from the possibility of facing financial hardship to fulfill the UHC goals set forth in the "Big 4 Agenda." To accomplish and attain medical goals, multi-sectoral partnership by all stakeholders, including the health sector, is necessary. The availability of working medical devices is a key element in ensuring effective health service delivery and a shortage or malfunctional medical equipment is associated with poor quality of care leading to low levels of patient satisfaction and preventable deaths. It is a challenge for many low-income countries to get medical equipment due to the cost factor. In the Kenyan setup, there is a bias skewed distribution of medical infrastructure towards urban areas while the rural areas have inadequate infrastructure. Insufficient physical space is another issue that prevents the full utilization of medical equipment, including reintegration and upgrade of medical equipment systems. Many health facilities have obsolete equipment. Hence the expansion, modernization and operation of the health sector together with adequate and appropriate trained staff, who give timely, and quality medical care will ensure the burden of diseases to be lowered and utilization of essential health care services. Clinical outcome will be improved, and patients will have confidence in the health facilities which are reliable as well (Ajwang et al., 2022).

In the world Health Assembly (WHA) resolution WHA 60.29 and WHA 67.20, member states recognized that medical equipment is a requisite for health care delivery although their regulation, selection and use pose challenges, especially in LMIC. WHO through the ‘WHO global for medical devices’, has enabled us to share initiatives to support counties to increase

access safe, affordable, appropriate, and effective medical devices towards UHC and the SDGs.

The Foras presents a range of medical information and resources on policy, regulation, innovation and nomenclature of medical devices and, selection, human resources for medical devices and management of medical devices (WHO, 2023).

There are many different types of health care equipment available today; therefore, the selection of the right and suitable equipment will depend on local requirements, the quality of the health facility, the medical professionals trained to use these devices, and the prevalence of illnesses encountered in the specified locations. Medical equipment is therefore essential in enhancing the delivery of medical care and utilization. It is therefore impossible to draw a list of core medical equipment which will be exhaustive or universally applicable such as fridge for storing vaccines, X-ray machine, examination lamp, operational theatre tables, blood pressure monitors, pulse oximeters, which are important in helping essential health services and utilization. According to Mohamed et al. (2013), many health care seekers are often turned away in many health facilities due to lack of medical equipment that is needed to address their health problems. Therefore, many health care amenities cannot be provided to patients without medical devices in an operational capacity.

2.5 Importance of Administrative Practices in Essential Medical Service Delivery

One of the key factors influencing the use of essential services is how the organization operates. It is significant to remember that individuals may not utilize health care services to their fullest potential simply because they are available. However, effective business procedures like consultation processes, quick turnaround times for patients, and simple medical data, and flow might boost the probability of health care utilization. To ensure

maximum utilization, institutional procedures must be in line with patient needs. There must be deliberate efforts to enhance the flow of medical data among departments and an efficient and effective dialogue process of fundamental medical amenities, to be provided to everyone and serve as a safety net for the most vulnerable. The emergence of organization as a system, to focus on patient-centeredness, providing sustainable and quality health services that are coordinated with both planned and unplanned care so that neither can impact the other, is another way to streamline organizational procedures. The use of technology enhances central organizational processes, enables flexible and essential medical delivery, addresses challenges, and drives the development of faster, more affordable healthcare solutions. Examples include the model of simulation of systems and proposed changes by the Cumberland initiative which underpins regular meetings of health care providers within locations allowing to review outcomes, on bottlenecks identified, limitations, and concerns. This is the information that has been shared following interactions and assessments, ensuring that medical treatments are provided cost-effectively along the entire pathway (Cumberland Initiative, Faculty of Medical Leadership and Management, n.d.).

Good governance and leadership, which is enhanced by managerial, clinical, and patient inputs, in line with administrative and organizational arrangements, should be in place, to ensure appropriate organograms, staffing structure, medical equipment, technology, communication and management practices. Governance and excellent organizational practices should be recognizing the value of continuing medical education and promoting research, with processes dedicated to continuing professional development, clinical careers and adequate time for research which contributes to national health care systems development and provide incentives to promote improved health care outcomes (Luxon, 2015).

2.5.1 Flow of Health Information

Service delivery requires effective communication and technology tools to match the ever-advancing medical dynamic standards. Many facilities are now adopting Enterprise Resource Planning (ERPs), to help them store patient data and communicate across the departments. ERPs enable efficient service delivery in that a patient does not have to carry medical records from one consultation room to another, as clinicians can access through the ERPs. However, facilities without such technologies take a lot of time moving from one consultation room to another. Sometimes files get lost, and a new one must be opened for a return patient, leading to untimely services. According to Muhammed et al., (2013), facilities need a reliable communication system and technology to enhance clinician to clinician communication to avoid untimely services. Many patients often avoid seeking health care because of the fear of taking too much time in waiting for the services.

Luxon (2015), carried out research at the Southwest Acute Hospital in Enniskillen, where it was noted that each wards bed had an LCD TV with a Dashboard for the clinician to view clinical appointments information and the patients to view health-conscious messages. A fully integrated health information system should support the flow of patient information to ensure health professionals, carers and patients can access information timely when needed. This will improve efficiency and effective utilization of essential health care and reduce long waiting periods. In addition, health care professionals who work in far outreach health facilities can access senior consultants to review patients who are unable to travel to referral hospitals, improve the provision of health care services.

An interactive database of patient information can allow real time access to multiple terminals around health care facilities thus admissions, referrals, discharge information, details of investigations, medical assessments, and location of patients can improve

efficiencies in patient care. A far possibility is allowing the provision of national treatment guidelines in the health system software to reduce medical errors.

The Kenya government embarked on to establish the national person identification (ID) process for using identification data and storing on the National Integrated Identity Management System (NIIMS) platform. This database will be used as a reference for national development initiatives, including the UHC. Thus, the unique patient identification (UPI) will ensure patients can access quality, secure and affordable care in any health facility across the country. Currently there are several disparate health information systems in use, which is hampering the delivery of quality and affordable health care, as there is lack of a supportive framework to facilitate the seamless exchange of patient information to enable quality care, treatment, and referral across the health services and health facilities. UPIs will facilitate data exchange with health, financial and other sector-specific information systems and avoid multiple patient data entries. This will enable us to get accurate statistics and uniquely identify patients and their longitudinal medical records, track their treatments, while at the same time lower disruptions to care, serious medical errors, inefficient use of resources and lack of accountability. It will enable the Kenyan medical sector to have one central location for all its patients. This will support accurate and clear registration of patients at the provider's locations, improving the standard of care and the use of medical services. Benefits of the UPIs in Kenya, include improvement of quality, safety, and access to care by ensuring that everyone is correctly identified. This will enable health care providers to collect and retrieve the necessary information to deliver optimum care at any service delivery point across the country. Improve patient tracking throughout the medical system including the continuum of care, as well as scheduling, payment, and coverage benefit claims, to encourage the effective use of medical resources (Ministry of Health, 2022).

Currently, the national health data system (HIS) is being used by all public health care facilities. The District Health Records Software (DHIS22) has further created and implemented this. This system has substantially improved the data's accessibility, which has been welcomed by stakeholders. However, there are still issues with using DHIS22, such as a lack of basic information technology abilities among medical professionals, inadequate quality of data, and a low level of data use for decision making by essential medical managers (Manya et al., 2015).

2.5.2 Consultation Process

The phases and processes individuals go through before getting treatment are included in the procedure for consultation, which affects the patient's choice to seek medical care. The range of services that are classified for people seeking medical attention includes items like the clinic hours, meetings by appointment only, waiting times, unsuitable criteria (like no family planning or services for adolescents), room arrangements, labeling, physical arrangement and access (like ramps for the disabled), and the way of providing the service. In numerous studies, waiting times have been discussed as an indicator in how satisfied consumers are with health care services. In some cases, waiting times have resulted in patients not receiving the necessary medical care because consultants aren't accessible or have a long waiting list. According to Garrison et al. (2011), 30% of patients shunned medical facilities with protracted consultation procedures. Patients complained that the idea of having to move approximately too much to receive medical care bothered them. Additionally, 70% of the patients stated that they look for and use medical services in settings with less movement. Therefore, the procedure that patients must go via to access basic health care services needs to be streamlined to avoid drawn-out consultations.

2.5.3 Patient Waiting Time

The duration of a patient's stay in a facility, from authorization to the final service rendered before departure, is referred to as the period of waiting. Within the hospital, there are several places where patients are waiting. In the WHO (2022), brief report, in Europe, health service provision was virtually disrupted in varying degrees during the Covid 19 pandemic. This decreased towards the end of 2021, leading to unmet health care needs of the population. Thus, when health care services were returning to normalcy, there was backlog of patients who needed specialist care leading to an increase in patient waiting time. This generated increased demand and supply of health care services, which led to longer waiting times for patients scheduled. Other drivers which pushed further waiting times were low numbers of health care workers, health care burnout and exhaustion, post-traumatic stress and anxiety, cost of treatment provision in a safe environment, increasing expectations of patients, trends in ageing population and increased rate of chronic diseases which escalated demand for care. The primary factors that can reduce patient waiting lists and promote effective delivery of medical services and utilize are the availability of a skilled workforce, enhanced facilities, financial capacity to expand the supply chain and services, and access to new methods and electronic solutions. Yet the downward side will be the fear of infections, increasing unmet needs, leading to decrease in demand for care and these might have detrimental health consequences (Ginneken et al., 2022).

In another investigation by Garcia-Corchero et al. (2022), it was revealed that waiting time for patients to access health care is a major topical discussion. Patients don't often get treatment, or is post phoned, causing further deterioration in patients' health status. Long waiting times are also seen as an impediment to receiving necessary medical care,

particularly in publicly funded health care facilities, where they can make patients unhappy and have a negative impact on the system of health care.

Other studies by various authors point out that long -waiting time can markedly increase costs for both patients and health facilities and can be a major determinant of patient satisfaction in seeking health care services. Cost effective scheduled appointments can improve patient flow and capacity, (Kern et al., 2021). While Abidoya et al. (2020), argues that quality of health care is closely linked to patient experience and satisfaction.

Lin et al. (2020), in a study for pediatric ophthalmology patients, found that in ambulatory hospitals, particularly pediatrics, they seek faster treatment to reduce further deterioration symptoms and disease.

In hospitals, efficient management of patient flow enhances quality of care and ensures utilization of essential health care services. This warrants continuous attention and should involve all health care staff, as part of a hospital quality improvement strategy (Sommer & Blumenthal, 2019). In a study conducted by Wilf-Miron (2020), The importance of timeliness in providing high-quality health care was discovered while tracking wait times for community-based medical treatment in a public hospital. When evaluating wait times among individuals seeking treatment, whether broad terms or specialized assistance, it is an important indicator of the efficacy of the medical system overall. Patient waiting time can negatively affect their health outcomes, and other factors such as anxiety and deterioration can be perceived lowly on utilization of essential health services. Longer waiting times can increase national health expenditure. Patient dissatisfaction has been connected to long waiting time, with patients spending more time waiting than being attended to (Xie & Or, 2017).

Everyone in the community should have easy access to and confidence using health services like primary health care, dental, behavioral wellness, and emergency public health services. But the rural population often experiences barriers to such health care services due to long waiting periods in limited health centers with limited health care services.

Organizational and governance structures should make efforts to reduce waiting times, to ensure health care services are available and utilization to be enabled. This is especially true for those who travel great distances to get medical attention only to have to wait all day for it. Therefore, continuous attempts ought to be made to decrease waiting times to boost consumption. Studies suggest multiple consultation rooms and enough health workers to address waiting time (WHO, 2022).

2.5.4 Financial Resource Allocation

Resource allocation, just like any other industry, applies to health care. Resources in health care can be in terms of human workforce or material form, are limited and need to be managed in an efficient way. Medical employees, both in the public and private sectors, health care organizations, medical equipment, and drugs are all in constant short supply, and all these things require funding. In addition, the demand for health care resources always exceed supply. According to WHO (2010), health financing cuts across all the objectives mentioned above and is necessary to strengthen health service delivery. Facilities that prioritize allocating resources to human skilled workers, a functioning health infrastructure, and an adequate supply of medication and health care equipment are more likely to provide efficient medical care, which will lead to increased use of those services.

- The cost of health services and poor functioning health finance system may deter people from seeking health care when needed and may avoid seeking health services.

When health services are directed out of pocket (OOP), then the burden of diseases can increase as many might not have the finance to pay from their pockets. Catastrophic health expenditure and financial burden, then can be prevented when health services are given with no costs (Njagi et al., 2020). To enable progress on UHC coverage and improve effective essential services and financial protection, financial resources should function well. Therefore, careful designs and health policies planning, and implementation can aid to address efficient coordination. Examples include contraction, payments arrangements under planned policies, timely disbursement of funds to health providers can improve quality of care. WHO's (2023) approach to counties is that policies on health services should be established, stated, and implemented, so that the population is entitled to know which services are not covered(co-payments). The functions include:

- Pay of health services by the patient not allocated by providers.
- Revenue, generated through government budgets, external aids, insurance schemes.
- Fund Pooling. This is amassing prepaid funds on behalf of the citizens. Examples include HHS and NHIF schemes in UK and Kenya Respectively.

Devolution was introduced in 2010, in Kenya, whereby the national and 47 county governments shared the health functions. Before devolution, resources flowed from the MOH Treasury for financial activities across the country. The transfer of funding and function began in the fiscal year 2013/14, after the new constitution. Funding is provided by the national treasury and each county, then independently determines, and mandates the allocation of funds for health services. The amount of money allocated has been rising to pay for strategic and expanding medical facilities, which have become heavily reliant on donations. MOH received Ksh 114 billion in funding for FY 2020/21, which is a rise of 27%

over a period of three years. The increase in funding is insufficient, though, to combat infectious diseases like malaria, tuberculosis, and HIV/AIDS and to provide basic health care services. The investigation of the Kenyan fiscal year allocation of budgets (FY 2018/19 - FY 2020/21) made recommendations to keep raising the budget share allotted to health, expand NHIF coverage to raise enough money for essential and optional contributions, reduce wasteful use of resources, and direct resource allocation to providing maternal and neonatal care, reproductive health care, and other vital medical services. MOH has established policies to promote increased funding for the health sector, investment from the public and private sectors, and regulatory relief (Ministry of Health, 2022b).

Study done in Malaysia by Mohamed et al. (2023), found that third world counties face challenges in providing quality and improved health care services. Due to budget constraints, and with increasing demand for health, there have been problems with the delivery of vital medical services. Prioritizing resources invested to produce the best results was the answer. Every nation should conduct an effective analysis that will allow for the best possible financial allocation. According to the economists, the main criterion for setting priorities is achieving a level of outstanding effectiveness with limited resources.

2.5.5 Affordability of Services

To achieve Vision 2030, the Kenya government has undertaken reforms towards UHC goals, which include free maternity services in all public hospitals since 2013; free primary health care in all public facilities; to equip major hospitals with latest state of art medical diagnostic equipment; provide hospital subsidies through NHIF targeting the vulnerable groups; provision of infrastructure and have a national referral strategy. This will ensure access to affordable, and quality services is available, through mobilization of adequate resources.

Successful projects are the Linda mama project and the health insurance subsidy (Kenya Vision 2023).

According to the Njagi et al. (2020) study, access to health care is closely related to affordability. All people having access to health coverage will enable affordability and reduce the likelihood of population needs that are not being met due to cost. To increase both the cost and the quality of health insurance, language proficiency would need to be enlarged up to cater to the needs of different population segments, especially the weak and the poor.

Affordability of services is an important factor utilization. Einstein (2012), noted that the value of service can be assessed by patients when doing uptake, whether they choose to pay or not. It means that sometimes a patient may choose not to pay for the health service as it is perceived not to match the value of the required expenditure thus utilization of that service not done. In many LMIC, access to quality health care is limited and patients must pay for high costs of treatments, which sometimes is ineffective. Some do not seek treatment due to the high costs of treatment, yet they are ill and seek an alternative method to heal. It is clear from this that to ensure that essential services are used, accessibility of medical care is an essential problem that needs to be addressed. Additionally, high costs are noted as a barrier to the acceptance of preventive health measures such as spreading knowledge about the use of condoms and mosquito nets.

2.5.6 Access To Care

Another aspect of the provision of crucial medical care is access to medical care. These include the travel time, mode of transportation, and separation to the closest medical center, as well as any other physical obstacles that might prevent a patient from obtaining care (Bakeera et al., 2009). Even if accommodation is reasonable and satisfactory, people may not

find health facilities useful if they are far away. According to Bobadilla (2008), people's willingness to seek medical attention is influenced by their proximity to the facility, as many people choose not to travel to medical centers or skip scheduled appointments because of the distance involved.

Access to care can also be in terms of patients not receiving the basic care at the health facilities even though the facility is in operation.

2.5.7 Availability of Essential Health Services

Availability of health care services means that essential health services are within easy reach physically. According to Bakeera et al. (2009), the vulnerable and poor group identifies availability of essential care in terms of both preventive and curative way and being it to be free. Thus, availability of health services provision in a timely manner is important and strengthens patient satisfaction and utilization in addition to reduced long waiting times (USAID, 2021). People will be discouraged from seeking health services after walking long distances and spending the whole day receiving the care services needed to be informed it is not available. Therefore, to increase service utilization, there should be consistent efforts to ensure all the factors influencing essential health care provision are available. Studies suggest multiple consultation rooms, and enough health workers to address waiting time, and availability of services. Patients should have the opportunity to receive routine and specific treatment, delivered by a qualified health professional who is familiar with the patient's medical background (WHO, 2021a).

2.6 Theoretical Framework

Systems theory is the framework for this proposal. Systems theory is a systemic theory about the multiplex of systems that exist in society and science, and it provides a framework within which to further explore and/or relate to any group of things that interact to produce an outcome. This could be an individual, a group, or a community. In this context, input, process, output, outcomes, and people are key variables of a system. All components need to function interpedently in a favorable interrelationship in a system theory (Ferlie & Shortel, 2001). Thus, thus for all components to work together, to produce a result, is the same. To be effective, the utilization and provision of essential health services requires both health workers and patients to work together to produce a result. In addition, there is a need for an effective drug supply chain and health infrastructure to support the delivery of essential health services. The factors that will be examined in the present investigation are those listed above. Patients must be present to use the necessary health care services to achieve the desired better health results. Health care providers may be accessible. Therefore, the failure of either party (health care provider or patients), leads to declined health.

2.7 Conceptual Framework

The supply (provision) and demand (utilization) of fundamental medical services were dependent and independent in the study, respectively. On the supply side, factors include the availability of qualified health care workers, staff competency, and job satisfaction; the procurement process; the accessibility of pharmaceuticals and health care supplies; organizational procedures, such as the flow of health information, the consultation process, patient waiting times, and resource allocation; and health infrastructure, which includes upkeep systems, ambulances, and medical equipment. Utilization with the use of essential

health services will be variable on the demand side. Access to health care facilities will be used to gauge how satisfied people are with the delivery of essential medical care, with a focus on accessibility in terms of cost, location, and availability.

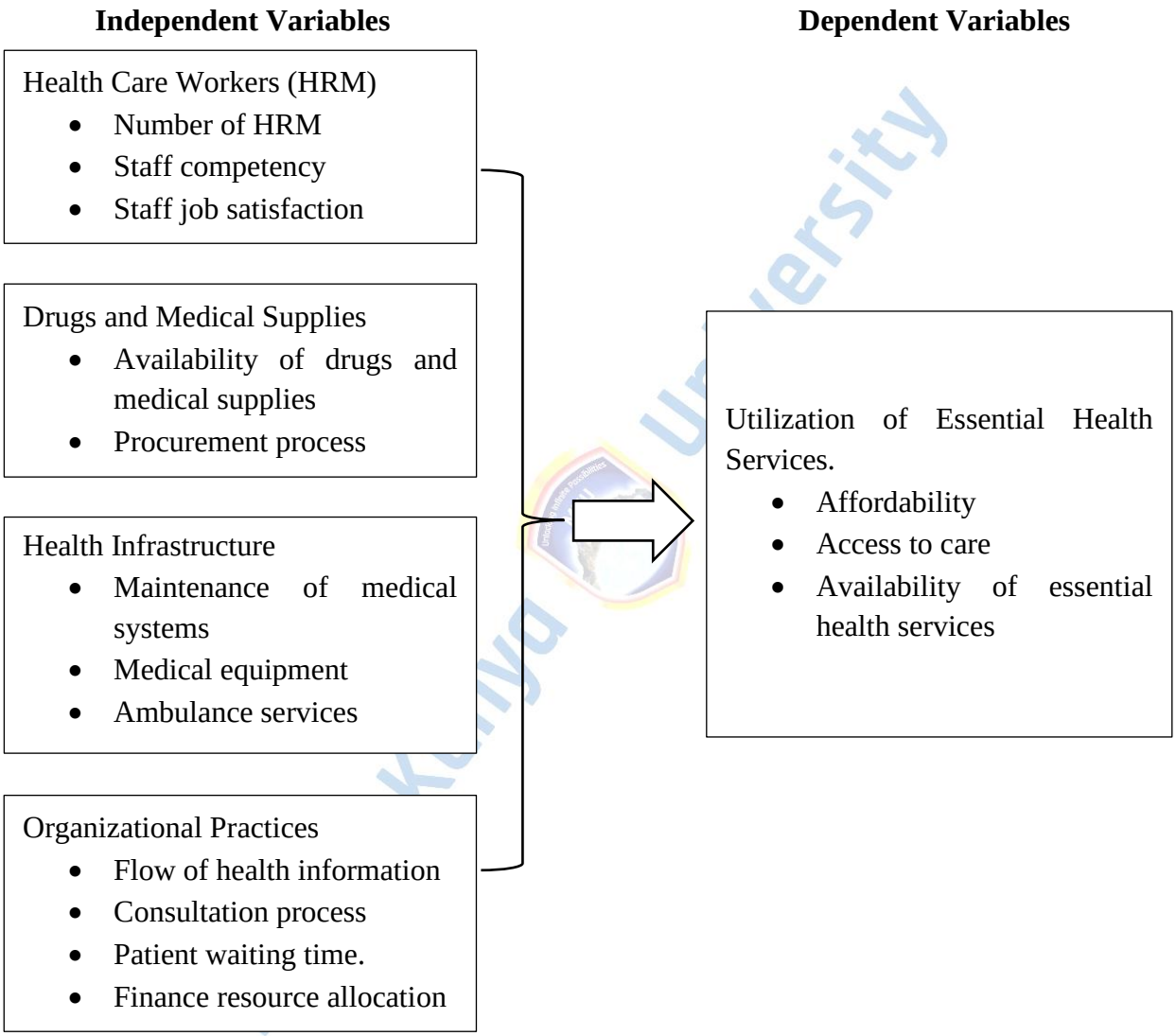

Figure 1: Conceptual Framework

2.8 Conclusion

In summary, provision and delivery of essential health services require resources. Implementing an essential health service and utilization needs resources which are constantly

available or shifting existing allocated resources to already budgeted programs or health facilities. Essential health services can help to improve health outcomes, strengthen equitable health services, and access to care without risking financial impoverishment from having to pay for the services. Many people in rural areas still cannot access basic essential health care because of poor access to health care services, either financially or geographically. Thus, utilization of health care can only be done when the factors influencing the delivery of health essential health care are adequately addressed.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The information given in this part is how the investigation was carried out. How the respondents were approached, the location of the study, and how the research was conducted. The study design, study location, population of study, sampling strategy, size of sample estimation, gathering data techniques, analysis of data, and data presentation are among the subsections. There is also discussion of ethical concerns with gathering data.

3.2 Study Design

A cross-sectional research study design was chosen for data collection at the two public health care facilities. The two public hospitals hosted a cross-section investigation using a mixed methods technique to provide data as per the questionnaire given. The study design was based on descriptive design. Descriptive design is the simplest form as it allowed the researcher to study and describe the variables listed in the research and develop a quick preview of particular interest because of sample size. It also helped to capture the current state of project implementation.

3.3 Study Site

Due to their locations within Mombasa County, the investigation took place at the CGTRH and Tudor Sub-County Hospitals. (see map in Appendix II). The study centers around these two hospitals.

3.4 Study Population

In statistics, a populace is a targeted group about which some desired information is acquired from. Population as defined by Kumar (2011), is a term that represents a specific cluster, events, elements, services, or people under study. In both hospitals in Mombasa County, the investigation's study population of interest included healthcare professionals from various cadres, including nurses, clinicians, pharmacists, IT workers, biomedical engineers, non-medical personnel, as well as patients visiting the two hospitals for treatment. Around 800 healthcare professionals work at CGTRH and 80 at Tudor Sub-County Hospital, respectively, in Mombasa County, Kenya. Each day, 400 to 800 patients visit CRTRH, and approximately 100 patients visit Tudor Sub-County Hospital.

The main target population of the study were healthcare workers and patients who were visiting the two hospitals seeking treatment. Due to the large numbers of both healthcare workers and patients, the daily register was used to get the patients who had registered to get treatment and for healthcare workers, it was the ones on duty. As a result, the simple Yamane formula was used to get the study size which was manageable to get data within the given period for the proposal.

3.5 Sample Population

The sample population were healthcare workers of different cadres working within the two public hospital who included pharmacists, nurses, health care information officers, clinicians, and non-medical staff. Another population included patients who were visiting the two hospitals seeking treatment. Both healthcare workers and patients were randomly selected.

3.6 Sample Size Determination

The Coast General Referral and Teaching hospital has around 800 healthcare workers and Tudor subcounty hospital having approximately around 80. While around 400- 800 patients visit Coast General Referral and Teaching hospital and around 100 patients seek treatment at Tudor subcounty hospital. Due to the large numbers and limited research data collection framework, this study used Yamane's condensed formula for proportions because Ray (2009) revised it, and it works well for populations that are small and a lesser sample size. The method described below will be utilized to calculate the size of the sample for patients as well as medical professionals.

$n = N / (1 + N [e^2])$

Whereby

n is the size of the sample

N is the populace size

e is the exactness level.

For health care worker for CGTRH

$n = 200/ (1+200 [0.05]^2)$

$n = 133$

For Health care workers for Tudor Sub- County Hospital

$n = 80/ (1 + 80 [0.05]^2)$

$n = 67$

Table 1: Health Care Workers Sampled by Cadre in Both Hospitals

	CGTRH	Sampled	Tudor Sub-County Hospital	Sampled	Total N%	Total Sampled
Pharmacists	8	5	2	1	10 (3.57)	6
Clinicians	20	13	10	7	30 (10.7)	20
HMIS Officers	11	7	5	4	16 (5.7)	11
Nurses	80	55	29	25	109 (38.9)	80
Hospital Managers	14	7	4	3	18 (6.43)	10
Other Cadres	67	46	30	27	97 (34.64)	73
Total Population	**200**	**133**	**80**	**67**	**280 (100)**	**n = 200**

For Patients who visit CGTRH

$n = 400/ (1+400\ [0.05]^2)$

$n = 200$

For the patients who visit Tudor subcounty hospital

$n = 60/ (1+60\ [0.05]^2)$

$n = 52$

Table 2: Sampling of Patient

	CGTRH	Tudor Sub-County Hospital	Total	Size of the Sample
Average number of patients per day	400	60	460	
Sampled	200	52	252	n = 252

3.7 Sampling Procedure

Random procedure for sampling was used to select participants for gathering data in the two hospitals involved in the investigation. The investigation focused on CGTRH and Tudor sub-County hospitals. The locations of the two hospitals being situated within accessible population in the coastal region. The two hospitals also have large bed capacity, whereby CGTRH stands at 700 beds and Tudor sub-county having 25 bed capacity.

To achieve the average number of respondents and be a significant representation of the various categories of medical employees were sampled. The sample was then divided by the percentage of the entire population using a proportional method of sampling, which is the total population of each cadre divided by the sample size. As a result, the sample size per cadre for this study was obtained. In this way all cadres are represented as per the sampling method of proportionate being used and will give the final sampling size as shown in Table 1 and Table 2 respectively. For patients random sampling was used for the two hospitals. For patients, the daily attendance registers were used in the study, thus a manageable sample size was achieved, instead of the monthly or annual attendance register, which would have given a huge volume of sample size which was not feasible to collect data for the duration of the

study. A structured questionnaire was used to collect information regarding utilization of essential services among patients and healthcare workers.

3.8 Criteria for Inclusion and Exclusion.

3.8.1 Inclusion Standards

Health professionals who were stationed at essential health service delivery points with vital medical amenities, made up the sample population. Both inpatient and out-patient department staff who were working at the two hospitals at the time when the sampling process was being carried out were included in this group. For patients who came for essential services, on daily basis and those who were in the in-patient departments were included in the sampling study.

3.8.2 Exclusion Criteria

Health workers who were not on duty and students, during the time of the sampling procedure, were excluded. Patients who were seriously ill and those with precarious health conditions were eliminated from the investigation.

3.9 Data Collection Instrument

A structured questionnaire was used for this study and given to both patients and healthcare workers. A structured questionnaire which was easy to use and less expensive, was suitable for this study for the sampling size to be achieved in the time allocated for the study. It offered a quick and effective way to gather data and guarantees that respondents maintain confidentiality.

3.10 Pre-testing of Tools

For a successful study results of this proposal, a pre-testing of the instruments was conducted at Port -Reitz hospital as a pre-review method. Before beginning the actual investigation, the pre-test randomly selected both patients and health care professionals, who were 100 and 50 respectively to make sure the research tools served the intended use of the research. To ensure that the proper data is gathered during the actual investigation, the pre-test results determined whether the questions in the survey needed to be realigned or written in a different way.

3.11 Validity and Reliability Tests of Research Tools

3.11.1 Validity

Validity, according to Ray (2009), is the degree to which a test evaluates what it is intended to measure. Many research studies have used structured questionnaires and key informant interviews in the past, and there is proof of their validity in both convergent and discriminant ways. According to Ray's investigation from 2009, which involved a validity analysis of key informant interviews and structured questionnaires using variables and clusters, the two tools continue to have some degree of convergent as well as discriminant validity. If a measure exists independently rather than the result of the measurement process or accident, it has discriminant validity. As a result, it is expected that the research tools will result in accurate measurement of the issues being investigated. The study used expert opinion method for this test. For expert opinion, the guidance and direction of the supervisor was sought. Improvements were made to the instrument upon guidance by the supervisor. Of major focus was the content and construct validity considerations which were considered critical to the fulfilment of research objectives (Mugenda & Mugenda, 2003).

3.11.2 Reliability

According to Ray (2009), getting consistent results in whatever measurement is being done, in a research study, refers to reliability. When the same the individual's count remains consistent even after being examined multiple times, or when the same test is administered with without any connection sets of comparable items or in different settings. Another study conducted by Oppenheimer (2013), targeting 500 patients on their satisfaction with health services, in the USA, yielded evidence for the reliability of the structured questionnaire. Ray (2009) conducted 120 surveys among health care workers appraising their level of job satisfaction using structured questionnaire and key informant interviews yielded a reliable result. This is enough proof of the expected reliability of the study to be conducted. The Cronbach's Reliability test was used for this purpose. An alpha coefficient of more than 0.70 would indicate a consistent or reliable instrument (Gliem & Gliem, 2003).

3.12 Data Collection Methods

During data collection, quantitative methods were employed, particularly the structured questionnaire in the study. A self-administered structure questionnaire was given to the target sample size to collect data in the two hospitals. The exit point of the two facilities was used for the patents to gather information on factors influencing utilization of essential services and for healthcare of the different cadres, the research approached them at their workstations at random service points.

3.13 Data Analysis and Presentation

Descriptive and differential statistics were used to analyze the data.

Quantitative data was analyzed using the SPSS using ANOVA. To provide a status report on the availability of medications, medical supplies, and hospital infrastructure, descriptive statistic is implemented. Inferential statistics are used to draw conclusions of the factors influencing the utilization of essential services and equitable service delivery. The multiple regression analysis was the main inferential tool utilized. The use of tables, charts and graphs was implemented for presentation of data.

3.14 Ethical Consideration

Ethical issues were addressed through seeking approval from of Mount Kenya University and the Ethical committees of the two hospitals where data were collected. Thus, permission was obtained from CGTRH, Tudor Sub-County hospitals and Mount Kenya University, prior to commencement of data collection. Therefore, access to all information was then permitted. Consent from respondents was also be requested.

CHAPTER FOUR: RESEARCH FINDINGS

4.1 Introduction

The contents of this chapter include data analysis, presentation, interpretation and discussion of the research findings. The chapter analyses and interprets data collected from both patients and health care workers on the subject matter. The main objective of the study was to explore the factors influencing the utilization of essential services in Tudor Subcounty and Coast general referral and teaching hospital in Mombasa County. Among the factors considered and assessed include human resources, availability of drugs, the role of infrastructure and the relevance of organizational practices.

4.2 Response Rate, Reliability and Validity Analysis

4.2.1 Response Rate

The study targeted a total of 200 respondents for health care workers and 252 for patients conducted in the two hospitals. Out of the 200 questionnaires and interview guides given to health care workers, 188 were returned giving a response rate of ninety-four percent. For patients, 250 out of the 252 questionnaires distributed were received back representing a response rate of 99.20%. The combined response rate for both patients and health workers stood at 96.90 percent. According to Mugenda and Mugenda (2003) a 50% response rate is adequate, and 70 % is rated good. Thus, the response rate in the study conducted was good.

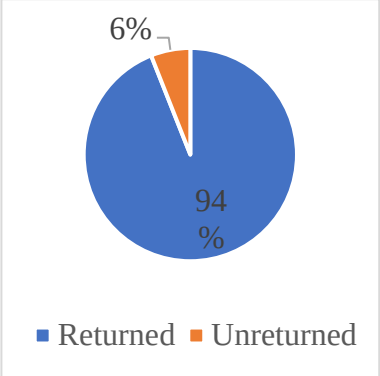

Figure 2: Response Rate for Health Care Workers

Source: (*research data 2024)*

Out of the two hundred healthcare workers sampled, the percentage for returned responses from the questionnaire, which were duly filled was 94% and 6% were unreturned, as shown in figure 2 above.

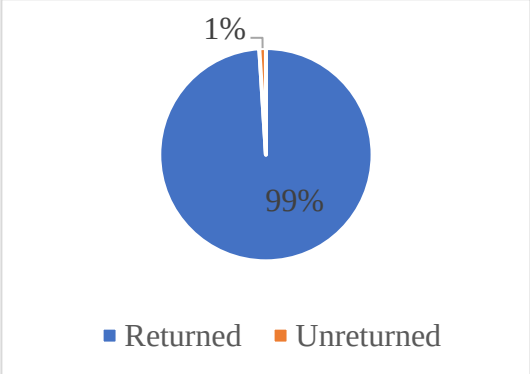

Figure 3: Response Rate for Patients

Source: (*research data)*

From figure 3, the response rate from the sampled patients, 99% were the returned with responses duly filled and 1% were unreturned.

4.2.2 Reliability and Validity of the Instrument

For reliability analysis, Cronbach's alpha was assessed and values of r interpreted. Consequently, if the r was higher than 0.70, the instrument would be assumed to be reliable.

There exists no law or rule showing that a Cronbach's alpha greater than 0.70 shows a better instrument. Thus, it is normally agreed amidst researchers that an alpha greater or equal to 0.7 indicates that an instrument is reliable in measuring what it was supposed to measure. Table 3 below shows the Cronbach's alpha reliability statistics.

Table 3: Cronbach's Alpha Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.732	.701	66

Source: *Survey data (2024)*

The Cronbach's alpha coefficient for 66 items was 0.732. This reflected a relatively high internal consistency. Cronbach's alpha evaluates internal consistency by calculating an equivalent to the average of all possible split half correlations (Gliem & Gliem, 2003). A reliability coefficient of greater than 0.70 would be considered acceptable in social science research situations.

For validity consideration, expert opinion method was the main tool used to assess validity of the research instrument. Revisions were done on the instrument until the supervisor (research expert) was satisfied with the usefulness of the instrument in data collection. The pre-testing process further highlighted some issues with the questionnaire which were addressed to the satisfaction of the research expert (research supervisor).

4.3 Demographic Information

The demographic information of the respondents for health care workers included age, gender and education level. For patients, age and gender were considered.

4.3.1 Age of the Respondents

The age of the respondents was obtained by the researcher. The aim of gathering this information was to determine the age bracket or age group that frequented both hospitals to get essential health services. The study also sought to establish the age bracket of those serving as health care workers, who were also part of the participants. Below are the outcomes in figure 4.

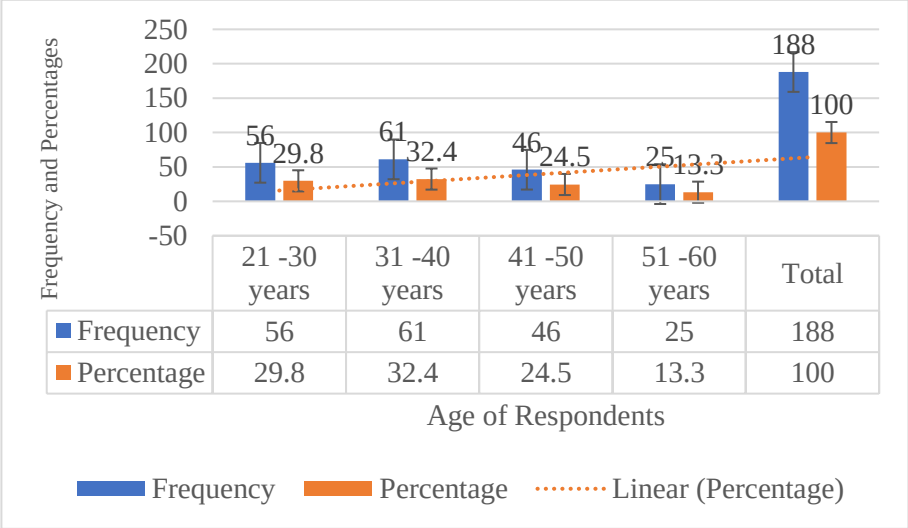

Figure 4: Age of Respondents for Health Care Workers

Source: (*research data)*

The output in figure 4 shows that most health care workers fell under the 31-40 years age bracket (32.4%), followed by 20-30 years at 29.8%, then 41-50 years at 24.5% and at 13.3% for 51- 60 years. This shows that health care workers are at their productive age in society.

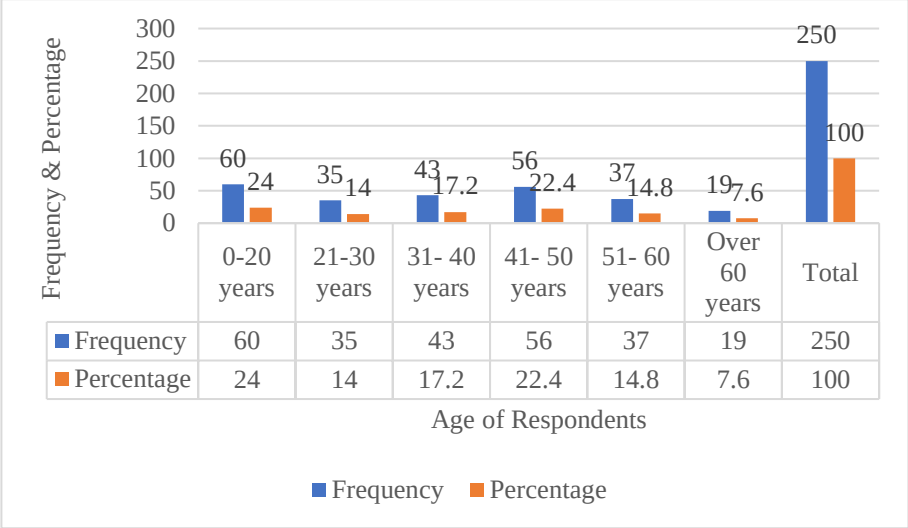

Figure 5: Age of Respondents for Patients Form the Two Hospital

Source: (Research *2024)*

From Figure 5 above, the hospital visits were most frequent among patients aged 41 to 50 years, accounting for 57.7% of total visits. This group primarily sought consultations for chronic conditions and specialized clinics. Patients aged 0 to 20 years made up 24% of visits, comprising children, adolescents, and young mothers.

Table 4: Different Essential Health Services Being Frequented by Patients

Type Of Clinic	Frequency	Percentage
Health checks up	9	3.6
Diabetes clinic	43	17.2
Hypertension clinic	34	13.6
Ante natal care	52	20.8
CCC clinic	31	12.4
Physiotherapy	13	5.2
TB clinic	20	8

Maternal Child Health clinic (MCH)	2	0.8
Family planning	11	4.4
Post natal clinic	9	3.6
Visit only when sick	9	3.6
Pediatric clinic	2	0.8
Oncology	15	6
Total	250	100

Source: (*research data)*

Table 4 above outlines the various essential services provided through different clinics and the frequency of patient visits across the two hospitals. Most patients visited the hospitals, for Antenatal Care (20.8%), followed by the Diabetes Clinic (17.2%), Hypertension Clinic (13.6%), and CCC Clinic (12.4%). Oncology visits accounted for 6.0%, while Physiotherapy and Family Planning services represented 5.2% and 4.4% of total visits, respectively. This indicates that expectant mothers make up a significant proportion of those seeking healthcare services.

4.3.2 Gender of the Respondents

Figure 6 below shows that female healthcare workers are more (56.7%), and 43.1% accounted for males from the sample analyzed from the two hospitals.

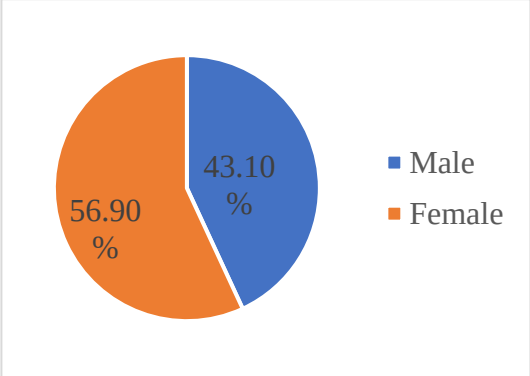

Figure 6: Gender of the Health Care Workers

Source: (Research data *2024)*

From the analysis in figure 7, data shows that female respondents accounted for 61.2%, indicating that women constituted the majority of patients seeking essential medical care.

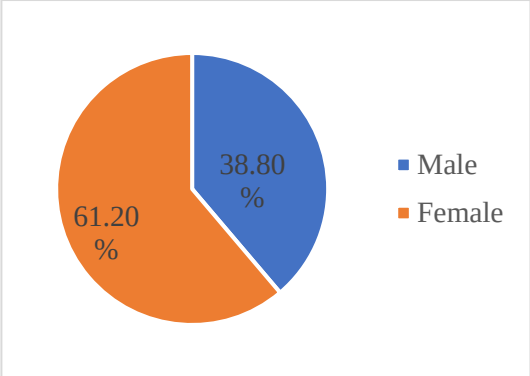

Figure 7: Gender for Patients Visiting the Two Hospitals

Source: (*Research 2024*)

4.3.3 Education Level for Health Workers

Analysis of the data in figure 8 below shows that most healthcare worker respondents held diplomas (51.6%), followed by degree holders at 38.8%. Master's degree at 5.9%, while PhD holders accounted for 1.6%, primarily comprising senior-level managers. This finding is significant to the research as it highlights the respondents' level of education, which

influences their ability to understand the survey questions with minimal effort and their competency in delivering essential healthcare services to the public.

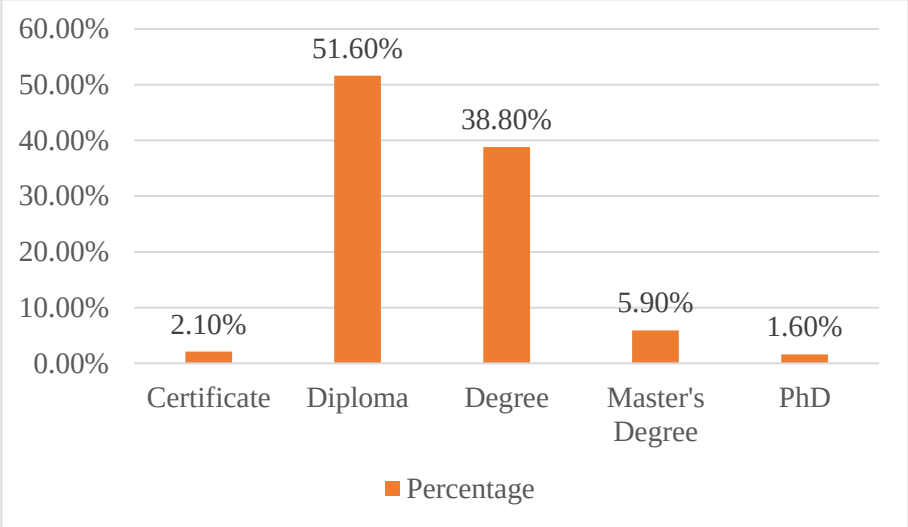

Figure 8: Education Level of Health Workers

Source: (*Research 2024)*

4.4 Descriptive Analysis

This section covers descriptive statistics on the factors considered in the analysis which are: Health care workers (HRM), drugs and medical supplies, health infrastructure, organizational practices and utilization of essential health services.

4.4.1 Health Care Workers

The provision of essential health care services is greatly nested on the presence of health care workers and is significantly affected by the number of health care workers, staff competency and staff satisfaction of health care workers.

4.4.1.1 Number of Health Care Workers

The availability of health care workers to provide essential health services was important in establishing whether the complaints of insufficient number of professional health care workers was justified. The researcher sought to establish whether there were enough health care workers in all sections of health care delivery in the respective two hospitals. The results are captured in figure 9.

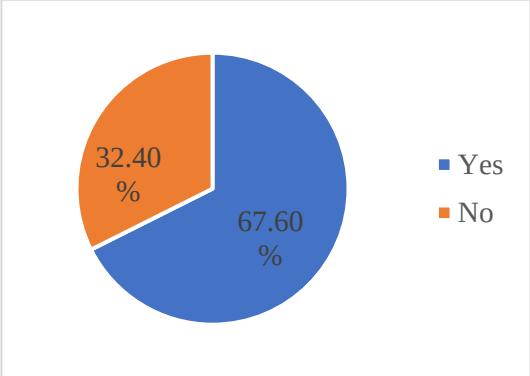

Figure 9: Response To Enough Health Care Workers by Patients

Source: (*Research 2024)*

The results from figure 9, (67.6% of responses) indicated that the two hospitals do not have enough health care workers. Only less than a third (32.4%) of respondents indicated that the hospitals had enough health care workers. The results show that there are not enough health workers within the two hospitals, leading to minimal service provision and low utilization of essential health care.

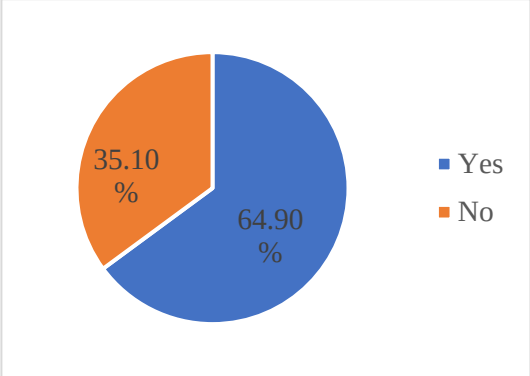

Figure 10: Response On Enough Health Care Workers by Medical Personnel

Source: (*Research 2024)*

64.9% of the healthcare respondents from figure 10, opined that there are not enough health care workers to cater for the huge numbers of patients seeking essential medical care in the two hospitals leading to long ques of patients, exhaustion, long working hours and fatigue of staff. 35.10% of them indicated that there were enough health workers in the two hospitals. The researcher sought to establish from patients and health care workers, the extent to which motivation of health care professionals has a positive impact on access to and utilization of essential health services. This was measured on a Likert scale of: 0 – Very strongly Disagree (VSD), 1 – Neutral (N), 2 Agree (A), 3 Slight Agree (SA), 4 Very strongly agree (VSA)

Table 5: Responses Obtained by Patients on How Motivation Has an Impact

Statement	VSD	N	A	SA	VSA	Mean	STD Deviation
Adequate health care workers	6	5	43	87	109	3.152	0.26754

Source: (*Research 2024)*

Table 5 shows how motivation of health care professionals has a positive impact on access to essential health services**.** Patients responded by agreeing that when there are enough health care workers, the staff feel motivated to work better to give essential services to patients and not get fatigue. Queues become short as patients get attended with diligence and in as little

time as possible. The mean figure of 3.152 shows most patients opined that the motivation of health workers led to improved access to essential health services. The low standard deviation (0.26754) indicates that the responses are held close to the mean, therefore validating the results. Health care workers responded as per table 6 below on how motivation has a positive impact on adequate staff within the two hospitals.

Table 6: Responses Obtained by HRM On How Motivation Has an Impact

Statement	VSD	N	A	SA	VSA	Mean	STD Deviation
Adequate health care workers	9	9	45	42	83	2.96	0.32425

Source: (*Research 2024)*

Table 6 shows how, motivation of health care professionals has a positive impact on access to essential health services. Responses from health care workers as from the statistics (M=2.96, SD=0.32), show, health workers largely agreed that motivation plays a vital role for both patients and health care workers in both hospitals to receive and give the required health care essential services respectively. Health workers opined that when there were adequate workers, many essential services were easily accessible and utilized.

Most of the patients complained about the absence or non-availability of medical doctors, nurses or other cadres of medical profession, to receive medical attention, long queues to obtain services due to medical personnel are less on duty or not available, thus making utilization of essential services to be difficult.

Inadequate health care workers lead to a smaller number of workers at work, who become fatigued and less motivated and result in long queues of patients to be seen, resulting in essential services not being accessed and not utilized. In addition, patients feel dejected as they might not be able to utilize essential health care services even though they are available.

Therefore, the provision of essential health care services can stall due to health care professionals being overworked and recruitment not being done timely leading to exhaustion and demotivation of health care workers at work.

4.4.1.2 Staff Competency

Table 7: Responses Obtained HRM On in Service Training

In Service Training for Health care Workers	Frequency	Percentage
Every six months	52	27.7
1 to 2 years	29	15.4
None	29	15.4
2 to 4 years	38	20.2
5 to 6 years	40	21.3
Total	188	100

Source: (*Research 2024)*

Table 7 shows how HRM responded on how often they get in -service training to stay updated on the ever-changing medical dynamics. Many of the health care workers responded that they do get the required updated in-service training through continuous medical education programs (CMEs) scheduled in their department to stay updated on current trends and guidelines. The majority (27.70%) of the health workers indicated that the in-service training was conducted every six months. 15.4% of them indicate that it was done with a frequency of 1-2 years. Another 15.4% informed that they had not attended any continuous medical education program allocated within their department. The main reason for missing out on training is being on duty while the training is being conducted, or not on duty and unable to

attend. A significant proportion of health workers, 20.2% and 21.3%, informed that they get the training opportunities in a span of 2-4 years and 5-6 years respectively.

The researcher set out to get respondents' opinion on the issues of staff competency. This was measured on a Likert scale of: 0 – Very Strongly Disagree (VSD), 1 – Neutral (N), 2 Agree (A), 3 Slight Agree (SA), 4 Very Strongly Agree (VSA).

Table 8: Responses On Staff Competency by Health Care Workers

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Adequately trained health care workers	4	3	38	64	79	3.1063	.64532
Adequate provision of medical equipment	7	2	39	44	96	3.1702	.54327
Training	10	4	47	45	82	2.9840	.23456
Inadequate provision of drugs and medical supplies	5	9	34	44	96	3.1543	.23496
Average						3.1037	.41452

Source: (*Research 2024)*

The average mean (3.10) obtained shows there was a significant agreement among health care workers that the health care professionals were highly competent in their work. The low average standard deviation (0.41) demonstrated proximity of observations around the mean showing that this condition was truly valid. There were adequately trained health care workers (M=3.10, SD=0.64), adequate provision of medical equipment (M=3.17, SD=0.54),

sufficient training (M=2.98, SD=0.23) yet there was inadequate provision of drugs and medical supplies (M=3.15, SD=0.23).

Table 9: Responses On Staff Competency by Patients

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Adequately trained health care workers	10	4	67	85	84	2.9161	.23537
Adequate provision of medical equipment	6	5	87	59	93	2.9124	.36734
Inadequate provision of drugs and medical supplies	3	4	72	83	88	2.9962	.32043
Average						2.9415	.30771

Source: (*Research 2024)*

There was agreement among patients (average mean=2.94, average standard deviation=0.31), that the health care workers were highly competent in their work. There were adequately trained health care workers (M=2.91, SD=0.23), adequate provision of medical equipment (M=2.91, SD=0.36) yet there was inadequate provision of drugs and medical supplies (M=2.99, SD=0.32).

4.4.1.3 Health Care Worker Job Satisfaction

The researcher sought opinions from patients and health care workers on the issues of health care worker job satisfaction. The following factors were addressed: provision of incentives, further training, motivation, functional medical infrastructure, adequate policies and clear communication channels. The study used the following Likert scale: 0 – Very Strongly

disagree (VSD), 1 – Neutral (N), 2 Agree (A), 3 Slight Agree (SA), 4 very strongly agree (VSA).

Table 10: Responses On Health Care Worker Job Satisfaction at Both Hospitals

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Incentives	20	7	48	52	61	2.6755	.35572
Trainings	10	4	47	45	82	2.9841	.34632
Motivation	9	9	45	42	83	2.9627	.29507
Functional Medical infrastructure	13	3	41	83	48	2.7979	.19576
Adequate Policies	14	17	39	73	45	2.6277	.34338
Clear communication channels	9	15	37	39	88	2.9681	.43263
Average						2.8361	.23546

Source: (*Research 2024)*

The results (average mean=2.84, average standard deviation=0.24) show agreement among health workers that they were satisfied with their jobs and assignments. The health workers agreed on availability of incentives (M=2.68, SD=0.35), training (M=2.98, SD=0.35) motivation packages (M=2.96, SD=0.30), functional medical infrastructure (M=2.79, SD=0.20), adequate policies (M=2.62, SD=0.34) and clear communication channels (M=2.96, SD=0.43).

Table 11: Responses On Health Care Worker Job Satisfaction by Patients

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Incentives	2	13	142	22	71	2.5880	.34232
Motivation	6	5	43	87	109	3.1521	.23546
Functional Medical infrastructure	4	8	21	186	31	2.9280	.32356
Adequate Policies	17	8	116	38	71	2.5521	.35424
Clear communication channels	3	12	114	34	87	2.7601	.20021
Average						2.7961	.29116

Source: (*Research 2024)*

As indicated by the results (average mean=2.78, SD=0.29), there was agreement among respondents who were patients that the health workers were satisfied at their job assignments. The patients agreed on availability of incentives (M=2.59, SD=0.34), motivation (M=3.15, SD=0.23), functional medical infrastructure (M=2.93, SD=0.32), adequate policies (M=2.55, SD=0.35) and clear communication channels (M=2.76, SD=0.20).

4.4.2 Drug and Medical Supplies

Availability of drugs and medical supplies is paramount to provision and utilization of essential health care services. The researcher set out to get respondents' opinions on the availability of drugs and medical supplies. The following factors were considered: funds, availability of drugs and medical supplies, stock of drugs and medical supplies, procurement procedures in place, guidelines on procurement policies, lead time for medicines and drugs

to be stocked, basic essential service affordability, handling unavailability of stocks, corruption practices in procurement, substandard supplies and unqualified stakeholders in procurement policies. This was measured on a Likert scale of: 0 – Very Strongly disagree (D), 1 – Neutral (N), 2 Agree (A), 3 Slight Agree (SA), 4 very strongly agree (VSA).

Table 12: Responses Obtained on Availability of Drugs and Medical Supplies

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Lack of funds	14	12	32	53	77	2.8883	.32457
Frequent stock out	5	7	42	67	67	2.9787	.20743
Transport cost	27	24	46	47	44	2.3032	.21176
Corruption in Procurement process	37	32	41	40	38	1.5744	.19653
Substandard drugs	17	26	34	47	64	2.6117	.29352
Average						2.4712	0.2338

Source: (*Research 2024)*

Table 12 above, were responses obtained by health care workers on the factors which influence availability of drugs and medical supplies and the impact it costs patients in accessing essential health care and affordability.

There was agreement on the part of health workers (average mean=2.47 and average standard deviation=0.23) that the factors considered were significant, thus influencing availability of drugs and medical supplies and ultimate access to and utilization of essential health care services. Results established strong agreement that lack of funds (M=2.88, SD=0.32), frequent stock out (M=2.97, SD=0.21) and substandard drugs (M=2.61, SD=0.29), were significant influencers of access to and utilization of essential health services. There was

partial agreement that transport costs (M=2.30, SD=0.21) and corruption (M=1.57, SD=0.19) were significantly influencing access to and utilization of essential health services.

Table 13: Responses Obtained on Availability of Drugs and Medical Supplies

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Lack of funds	7	10	38	93	102	3.0920	.22296
Frequent stock out	3	19	56	50	122	3.0762	.43245
Transport cost	4	14	44	28	160	3.3040	.32846
Corruption in Procurement process	2	6	51	110	81	3.0481	.32723
Substandard drugs	13	16	123	53	45	2.4038	.28532
Average						**2.9848**	**.31928**

Source: (*Research 2024)*

In table 13 above, responses obtained by patients on the factors which influence availability of drugs and medical supplies and the impact it costs patients in accessing essential health care and affordability.

With the average mean of 2.98 and average standard deviation of, 0.31, patients agreed that the factors considered were generally significant causes influencing availability of drugs and medical supplies and eventual access to and utilization of essential health care services. Results established strong agreement among patients that lack funds (M=3.09, SD=0.22), frequent stock out (M=3.07, SD=0.43), transport costs (M=3.30, SD=0.33), and corruption in procurement process (M=3.04, SD=0.33) were significant influences of access to and utilization of essential health services. There was only moderate agreement among patients

that substandard drugs (M=2.40, SD=0.29) was a significant factor influencing access to and utilization of essential health services.

Table 14: Responses On Factors Affecting Availability of Drugs

Statement	Yes	Percentage	No	Percentage
Availability of drugs	34	18.09	154	81.91
Procurement process in place	127	67.55	61	32.45
Policies on Procurement Process	102	54.26	86	45.74
Can the average patient afford basic drugs	41	21.81	147	78.19

Source: (*Research 2024)*

In table 14, responses were obtained by health care workers regarding drugs and medical supplies and the implication to provision of essential health care.

81.9% of respondents (health workers) highlighted unavailability of drugs as a key challenge affecting on provision of and utilization of essential health services.18.09% of health workers indicated that drugs were readily available. Slightly above two thirds of health workers (67.55%) indicated that the procurement process in place was a significant factor influencing the provision of and utilization of essential health services. 32.45% of health workers held the contrary opinion. 54.26% of the respondents (health workers) indicated that the policies on procurement in place were key determinants of provision of and utilization of essential health services while 45.74% holding the contrary view. A majority (78.19%) of health workers participating in the study indicated that the average patient could not afford basic drugs prescribed. The contrary opinion was only held by a small proportion (21.81%) of participants.

Table 15: Responses On Factors Affecting Availability of Drugs

Statement	Yes	Percentage	No	Percentage
Availability of drugs	40	16.0	210	84.0
Procurement process in place	120	48.0	130	52.0
Policies on Procurement Process	12	4.8	238	95.2
Can the average patient afford basic drugs	83	33.2	167	66.8

Source: (*Research 2024)*

In table 15 above, responses obtained by patients on availability of drugs and medical supplies and the implication to provision of essential health care. For patients, unavailability of drugs was identified as a key challenge impacting on provision of and utilization of essential health services with 84% of patients indicating this. Only a small proportion (16.0%) of patients indicated that drugs were readily available. 52% of the patients indicated that the procurement process in place was a significant factor influencing the provision of and utilization of essential health services. While a significant proportion (48%) of the patients held the contrary opinion. 95.20% of the respondents (patients) indicated that the policies on procurement in place were key determinants of provision of and utilization of essential health services with only 4.8% holding the contrary view. Lastly 66.80% of patients indicated that the average patient could not afford basic drugs prescribed. The contrary opinion was only held by a small proportion (33.20%) of participants.

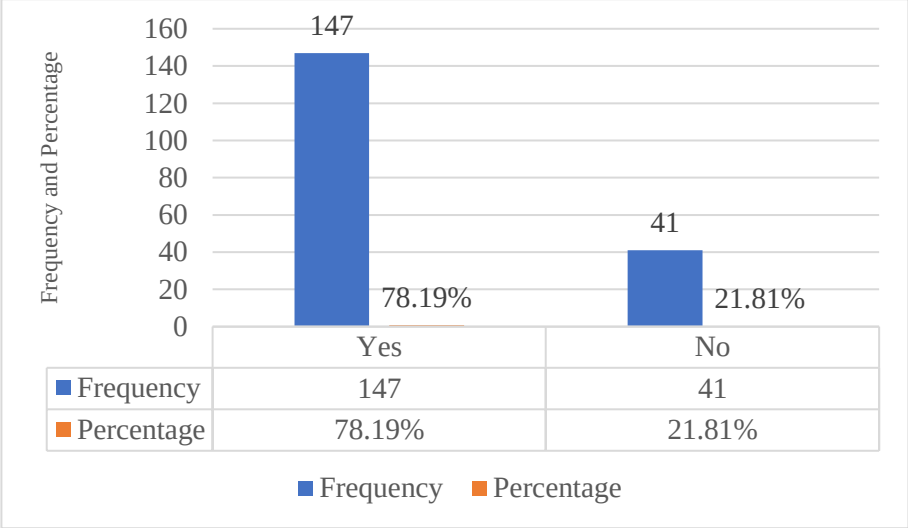

Figure 11: Responses On Affordability of Drugs and Medical Supplies

Source: (*Research 2024)*

From figure 11 above, majority of health care workers (78.19%) indicated that patients could hardly afford basic medical supplies with only 21.81% indicating otherwise.

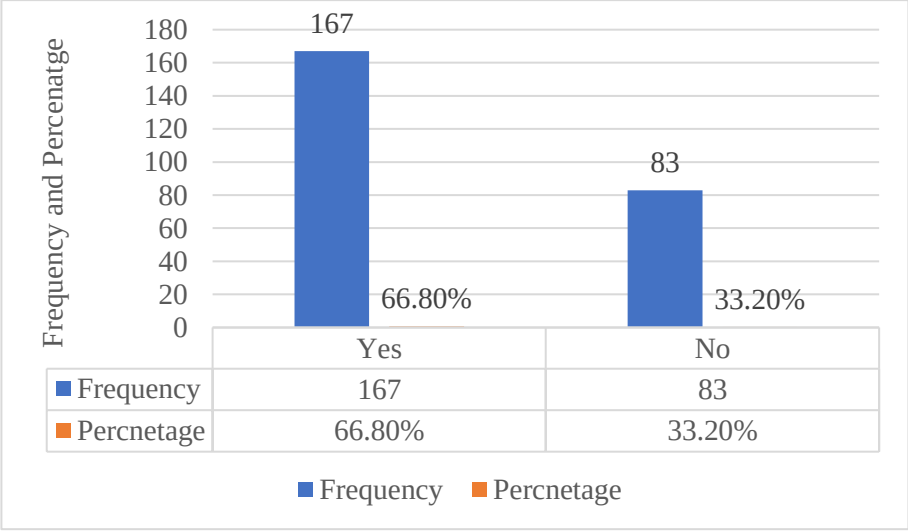

Figure 12: Responses By Patients on Affordability of Drugs and Medical Supplies

Source: (*Research 2024)*

From figure 12 above, two thirds of patients who responded (66.80%) indicated that they could hardly afford medical supplies. Only about a third of the patients responded (33.2%) that they could afford basic medical supplies.

Table 16: Lead Times for Drugs and Medical Supplies to Be Re-Stocked

Lead time for restocking	1 week	2-3 week	4 weeks	over 4 weeks
	15 (7.98%)	37 (19.68%)	60 (31.91%)	76 (40.43%)

Source: (*Research 2024)*

From table 16, 40.43% of health care workers reported that it takes over four weeks for medical supplies to be re-stocked while 31.91% responded it takes four weeks. The rest indicated that it took two weeks and one week respectively, (19.68% and 7.98%) for replenishments to be made on the stock of drugs. Most essential stocks come from KEMSA, while a small percentage is purchased through tender evaluated suppliers.

Lead times do affect the stocking of drugs and essential medical supplies as longer lead times means drugs and medical supplies are not available timely. Patients miss the essential items, and utilization is not effectively done.

Table 17: Responses Of Unavailability of Medical Supplies by Healthcare Workers

Statement	Many Times,	Few Times	Cannot tell
Unavailability of drugs	135 (71.80%)	35 (18.62%)	18 (9.58%)

Source: (*Research 2024)*

From table 17 above, 71.80% of health workers response obtained, unavailability of drugs and medical supplies occurs many times. Only 18.62% of health workers indicated that drugs were unavailable only a few times while 9.58% were indifferent on the issue.

Table 18: Responses Of Unavailability of Medical Supplies by Patients

Statement	Many Times,	Few Times	Cannot tell
Unavailability of drugs	176 (70.40%)	68 (27.20%)	6 (2.40%)

Source: (*Research 2024)*

From table 18 above, 70.40% of patients responded on unavailability of drugs and medical supplies occurs many times. Only 27.20% of patients indicated that drugs were unavailable only a few times, while 2.40% were indifferent on the issue. This has an influence on utilization of essential health care services.

Table 19: How Unavailability of Drugs Is Handled – Healthcare Workers

Statement	Frequency	Percentage
Patient informed to buy	117	62.2
Patient referred to another facility	36	19.1
Patient informed to wait for supplies	35	18.6
Total	188	100

Source: (*Research 2024)*

In table 19 above, responses received by health care workers on how the two hospitals handles the situation on unavailability of drugs and medical supplies.

To handle the issue of unavailable drugs at the hospitals, 62.2 percent of health care workers indicated that patients are informed to buy the drugs or medical supplies. While 19.1 percent of them indicated that the patients are referred to another facility. Finally, 18.6 percent of health workers indicated that patients are advised to wait for supply and replenishment of drugs into the hospital.

Impact on patients buying or referred to another facility means there are chances of patients not buying the drugs resulting in delayed treatment. This shows that utilization of services is not achieved. This can have an impact on the patient as those with chronic illnesses can get worse and more financial burden on the patient.

Table 20: How Unavailability of Drugs Is Handled - Patients

Statement	Frequency	Percentage
Patient informed to buy	210	84.0
Patient referred to another facility	9	3.6
Patient informed to wait for supplies	31	12.4
Total	250	100

Source: (*Research 2024)*

Table 20 above shows analysis of patients' responses when asked what happens when dugs are not available when accessing essential health services.

84% of the respondents indicated that when faced with unavailability of drugs, the patients are advised to buy the drugs from elsewhere.12.4% of patients indicated that they were informed to wait for supplies and lastly 3.6% said they were referred to another facility.

Most patients seeking services in the two public health care facility cannot to afford to buys drugs resulting to medication not being bought leading to services they seek not utilized.

4.4.3 Health Infrastructure

Responses were obtained through the questionnaire on the following: maintenance of medical equipment, availability of ambulance and availability of medical equipment. Health infrastructure directly influences patient satisfaction with utilization of essential health

services. A positive change in any of the following variables such as availability of medical equipment, easily accessible rooms, flow diagrams to show directions of consultation room, infrastructure to cater for special needs cases and ambulance services which leads to patients having access to essential services and thus utilization of the essential health care system. When medical equipment breaks down, services are not given to patients such as basic services like blood pressure monitoring.

Table 21: Responses Of Health Care Workers on Medical Equipment

Statement	D	N	A	SA	VSA	Mean	Std Deviation
Timely maintenance of medical equipment	12	12	32	56	76	2.9150	.26423
Adequate provision of medical equipment	7	2	39	44	96	3.1702	.20012
Average						3.0426	.23217

Source: (*Research 2024)*

As indicated by the results in table 21, (average mean=3.04, average standard deviation=0.23), there was strong agreement among health care workers on good condition and maintenance of medical equipment at the two hospitals. The health care workers strongly agreed that there was timely maintenance of medical equipment (M=2.91, SD=0.26) as well as adequate provision of medical equipment (M=3.17, SD=0.20).

Table 22: Responses Of Patient on Adequate Medical Equipment

Statement	D	N	A	SA	VSA	Mean	Std Deviation
Adequate provision of medical equipment	6	5	87	59	93	3.87	.20643
Average						3.87	.20643

Source: (*Research 2024)*

From table 22, the mean (3.87) indicates that patients largely agreed that there was adequate provision of medical equipment in the two hospitals. The average standard deviation (0.20) validates this statement as it represents proximity of observations around the mean.

Table 23: Responses On Available Infrastructure from Healthcare Workers

Statement	Yes	Percentage	No	Percentage
Flow directions for consultation rooms	111	59.04	77	40.96
Easily accessible consultation room	134	71.23	54	28.77
Well labelled rooms	104	55.32	84	44.68
Infrastructure to cater for special care patients	46	24.47	142	75.53
Availability of Ambulance services	91	48.40	97	51.60
Operational Ambulance services	67	35.64	121	64.36

Source: (*Research 2024)*

Table 23 shows the statistics on flow direction, accessible and well labelled consultations room, infrastructure to cater for special care patients, availability and operational ambulance services from responses obtained from health care workers.

59.04% of health workers indicated that flow directions for consultation rooms had been established at the hospitals with 40.96% holding the contrary opinion. More than two thirds (71.23%) of health workers indicated that there were easily accessible consultation rooms at

the hospitals with less than a third (28.77%) indicating otherwise. More than half of health workers (55.32%) indicated that the rooms were well labelled with 44.68% indicating that they were not. However, a majority (75.53%) of health workers indicated that there was hardly good infrastructure to cater for special care patients with only 24.47% indicating presence of such infrastructure. Similar, the majority (51.60%) of health care workers indicated that ambulance services were unavailable at the hospitals with only 48.40% indicating that those services were available. Lastly, 64.36 % of health care workers indicated that ambulance services were not operational while 35.64% indicated that the ambulance services were operational.

Table 24: Responses On Available Infrastructure from Patients

Statement	Yes	Percentage	No	Percentage
Flow directions for consultation rooms	134	53.60	116	46.40
Easily accessible consultation room	41	16.40	209	83.60
Well labelled rooms	27	10.80	123	89.20
Infrastructure to cater for special care patients	42	16.80	208	83.20
Availability of Ambulance services	99	39.60	151	60.40
Operational Ambulance services	104	41.60	146	58.40

Source: (*Research 2024)*

Table 24 shows statistics on flow direction, accessible and well-labelled consultations room, infrastructure to cater for special care patients, availability and operational ambulance services from responses obtained from patients.

According to 53.60% of the respondents, the hospitals had visible flow directions for consultation rooms. While 46.40% of the respondents were of the contrary opinion. 83.60%

of patients indicated that the consultation rooms were not easily accessible. Only 16.40% indicated that the consultation rooms were easily accessible. 83.60% of patients indicated that the rooms were not well labelled with only 10.80% of them indicating the contrary. 83.20% of patients reported that the hospitals lacked necessary infrastructure to cater for special care patients with only 16.80% of them indicating that such infrastructure was existent. Finally, 60.40% of patients said that ambulance services were unavailable, with only 39.60% indicating that the ambulance services were available. According to 58.40% of patients, the ambulance services were not operational with only 41.60% indicating that the ambulance services were operational within the two hospitals.

4.4.4 Organization Practices

The researcher obtained information through the following – patient waiting period, consultation process, flow of health information, and availability of funds.

Table 25: Health Workers Responses on Patient Waiting Period

	Immediately	1hr	2hr	3-4hrs	4hrs & above
Emergency & acute cases	89 (47.3%)	67 (35.63%)	24 (12.76%)	8 (4.26%)	0
Routine check-up	22 (11.70%)	75 (39.89%)	77 (40.96%)	10 (5.32%)	4 (2.13%)
Chronic cases	29 (15.43%)	40 (21.28%)	101 (53.72%)	15 (7.98%)	3 (1.60%)

Specialized clinics	7 (3.72%)	20 (10.64%)	34 (18.09%)	114 (60.64%)	13 (6.91%)
Average	19.53%	26.86%	31.38%	19.55%	2.66%

Source: (*Research 2024)*

The majority (31.38%) of the health workers indicated that on average, it takes patients a maximum of 2 hours waiting period to access various essential health services. 26.86% indicated that it took one hour for patients to get various health services while 19.53% of health workers indicated that it took 3-4 hours to get the services.19.53% of health workers indicated that various essential health services were accessed immediately. Lastly 2.66% of health workers indicated that the delay in access to essential health services could last for more than four hours.

Table 26: Patients Responses from Patients Waiting Period

	Immediately	1hr	2hr	3-4hrs	4hrs and above
Emergency & acute cases	193 (77.2%)	19 (7.60%)	24 (9.60%)	12 (4.8%)	2 (0.8%)
Routine check-up	10 (4.0%)	28 (11.2%)	186 (74.4%)	22 (8.8%)	4 (1.6%)
Chronic cases	29 (11.60%)	40 (16.0%)	99 (39.60%)	67 (26.8%)	15 (6.0%)
Specialized clinics	7 (2.8%)	39 (15.60%)	34 (13.60%)	114 (5.70%)	56 (22.40%)

Average	23.90%	12.60%	34.30%	11.53%	7.7%

Source: (*Research 2024)*

From table 26 above, 34.30% of the patients indicated that it took two hours on average to obtain essential health services from the two hospitals. This was followed by 23.90% of the patients who indicated that health services were dispensed immediately. A further 12.60% and 11.53% of patients indicated that health services were received within an hour and between 3 and 4 hours respectively. Only 7.7% of patients indicated that it took more than 4 hours to obtain essential health services.

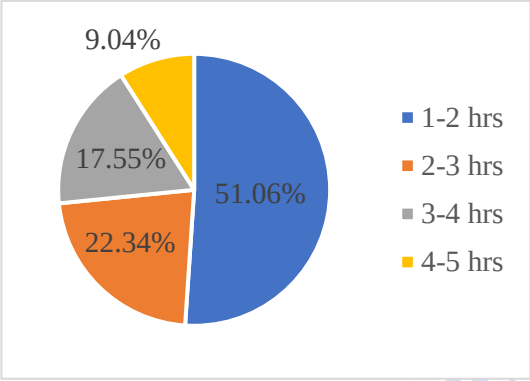

Figure 13: Health Workers Responses on Patient Consultation Process

Source: (*Research 2024)*

From figure 13, above 51.06% of health workers indicated that it took between 1to 2 hours for patients to que for the consultation process and access essential health services. 22.34% and 17.55% of the respondents indicated that the process took 2 to 3 hours and 3 to 4 hours respectively. Lastly 9.04% of health workers indicated that this process took more 4 to 5 hours.

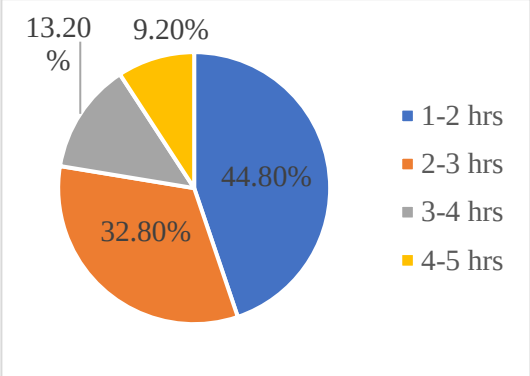

Figure 14: Patients Responses from Patient Regarding Consultation Process

Source: (*Research 2024)*

From figure 14 above, 44.80% of patients indicated that it took 1to 2 hours to go through the consultation process and access essential health services. 32.80% of the respondents indicated that the process took between 2 to 3hours while 13.20% of patients indicated that the process took between 3 to 4 hours. Lastly 9.20% of patients indicated that the consultation process took 4 to 5 hours.

Table 27: Responses Of Health Care Workers on Flow of Health Information

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Health workers	12	24	127	47	54	3.3777	0.26421

Source: (*Research 2024)*

The mean (3.337) indicates that health workers moderately agreed that there was timely flow of health information and that this impacted on timely utilization of health services. The average standard deviation (0.26) validates this statement as it represents proximity of observations around the mean.

Table 28: Responses Of Patients on Flow of Health Information

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Patient	114	16	67	9	44	1.412	0.20042

Source: (*Research 2024)*

The mean (1.41) indicates that patients disagreed that there was a timely flow of health information and that this impacted on timely utilization of health services. The average standard deviation (0.20) validates this statement as it represents proximity of observations around the mean.

Table 29: Responses Of Health Care Workers on Availability of Funds

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Health workers	3	13	33	49	90	3.117	0.21954

Source: (*Research 2024)*

The mean (3.11) indicates that health workers agreed that availability of funds was a major issue impacting on provision and timely utilization of health services. If funds are available, then other resources are available such as drugs and medical supplies.

Table 30: Responses Of Patients on Availability of Funds

Statement	VSD	N	A	SA	VSA	Mean	Std Deviation
Patient	3	19	22	4	202	3.532	0.20005

Source: (*Research 2024)*

The mean (3.53) indicates that patients strongly agreed that availability of funds was a major

issue influencing on timely utilization of health services. Most times, the health care facilities run out of essential items leading to patients not receiving timely care. Many patients who visit the two public hospitals are unable to afford the basic essential health care services.

The devolved government is doing its best to ensure the shortfalls are catered to but the numbers of patients seeking health care are increasing everyday due to cost of living.

Patient responded that most of them visit either of the two hospitals due to lack of funds, yet there are still unable to receive treatment due to lack of adequate staffing, no drugs or inadequate medical equipment.

4.5 Inferential Analysis

The inferential analysis was key in informing inferences or generalization on the wider population. The multiple regression analysis was the main inferential tool used.

4.5.1 Multiple Regression Analysis

The multiple regression analysis was a key tool in effectively answering the research questions on factors influencing utilization of essential health services at Coast general referral and teaching hospital and Tudor sub-county public hospitals, in Mombasa County, Kenya. Specifically, the regression modelling was significant in the determination of the effect of Health care workers (HRH), Drugs and Medical Supplies, Health Infrastructure and Organizational Practices on Utilization of Essential Health Services. The tool helped in identifying which variables influence a dependent variable thus making it useful in statically determining how the independent predictors interact and affect utilisation of essential services.

Table 31 provides statistical output of the F test.

Table 31: F-Test on ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	364.004	4	91.001	111.002	.002
Residual	47.541	434	.109		
Total	411.545	439			

Source: (*Research 2024)*

a. Predictors: (Constant), Health care workers (HRH), Drugs and Medical Supplies, Health Infrastructure, Organizational Practices

b. Dependent Variable: Utilization of Essential Health Services

Table 31 above with the ANOVA outcome, are the results of the regression model and provide F Statistics measures - the model's goodness (Sanderson & Windmeijer, 2016).

The model summary shows the usefulness of the model in predicting the utilization of essential health services.

At the 5% significance level, evidence was obtained to show that the gradient (slope) of the regression line was different from zero. This observation is made as the p-value (0.002) is less than 5% (0.05) significance level. Therefore, at least one of factors considered Health care workers (HRH), Drugs and Medical Supplies, Health Infrastructure, and Organizational Practices was a useful predictor of Utilization of Essential Health Services.

The regression coefficients are not significantly distinct from zero, as indicated by a significant F value. (Plonsky & Oswald, 2017, Hox, et al, (2017). This implied that the regression model obtained was fit and statistically significant therefore can be deemed fit for prediction purposes. The ANOVA outcome indicates that the model of regression used in this study is useful for inferring and forecasting the causal relationship between the four

independent factors and utilization of essential services. Table 4.43 shows the output for the model summary.

Table 32: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.874[a]	.764	.723	.25268	2.5279

Source: (*Research 2024)*

a. Predictors: (Constant), Health care workers (HRM), Drugs and Medical Supplies, Health Infrastructure, Organizational Practices

b. Dependent Variable: Utilization of Essential Health Services

Table 32 shows the coefficient of determination (R Square) stands at 0.764. The implication is that 76.40% of variation in the utilisation of essential health services was influenced by the factors considered in the analysis (Health care workers (HRH), Drugs and Medical Supplies, Health Infrastructure, Organizational Practices). Therefore, only 23.6% of variation in utilisation of essential health services was influenced by other factors not included in the model. This portrays a positive correlation between the independent variables with the dependent variable, R Square (R2 (0.764), referred to as the coefficient of determination statistics in evaluating how well the model fits the data in assessing the influence of each independent variable on utilization of essential services.

The Coefficients output of the multiple regression analysis demonstrates the magnitude of effect of each factor (Health care workers (HRM), Drugs and Medical Supplies, Health Infrastructure and Organizational Practices) on Utilization of Essential Health Services.

Because the R2 in a multiple linear regression model increases as the number of covariates increases, adjusted R2 (0.723) is the most realistic estimate of the proportion of variation

predicted by the covariates included in the model, and thus adjusted R square value is utilized within the examined data for outcome analysis. The corrected R square for this study is 0.723, implying that the four determinants in the model is responsible for around 76.4 percent of the variance in utilization of essential service and the remaining 23.6 percent is attributed to other factors not on this model. Standard Error of the Estimate of .25268 measures how close the actual values are to the regression line, standard error estimate is small, it indicates that the variables are closely related, and that the regression model will give accurate estimates and so can be relied upon for prediction purpose because its variability is small. Table 44 gives the output.

Table 33: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	5.797	.132	4.653	43.943	.004
Health care workers (HRH)	.732	.104	.705	7.038	.001
Drugs and Medical Supplies	.895	.364	1.053	2.459	.021
Health Infrastructure	.543	.346	.653	1.564	.031
Organizational Practices	.963	.643	.977	1.499	.017

Source: (*Research 2024)*

a. Dependent Variable: Utilization of Essential Health Services

The intercept value of 5.797 indicates that the regression equation intersects the Y axis at 5.797, when all the independent variables are at zero meaning that utilization of essential services would improve by 5.797 if there was no change in its determinants used in the model. The multiple regression analysis output provides evidence that all factors considered (health care workers (HRH) (β=0.732, p=0.001), meaning that a relative effect on utilization of essential services. If there are healthcare workers at 100%, then there would be 73.2% increase in the utilization of essential services and utilization. Hence Health care workers contribute positive to utilization of essential services.

Drugs and medical supplies (β=0.895, p=0.021), indicating that availability of drugs and medical supplies always would significantly increase utilization of essential services at 89.5%.

The beta coefficient for Health infrastructure is 0.543, with p value 0.031, which is around the maximum value of 0.05. this means that when all current conditions are constant, a 54.4% increase in utilization of essential services will result, meaning that health infrastructure cause a significant contribution in provision and utilization of essential healthcare services.

For Organizational practices, the beat coefficient stands at 0.963, and p value 0.017), indicating that 96.3 % increase in utilization of essential services are enabled when there are an efficient and effective organizational practice within the two hospitals.

The multiple regression analysis output provides evidence that all factors considered (health care workers (HRH) (β=0.732, p=0.001), drugs and medical supplies (β=0.895, p=0.021), health infrastructure (β=0.543, p=0.031) and organizational practices (β=0.963, p=0.017) are useful and positive determinates of the utilization of essential health services.

The regression model is developed as:

$Y_{ij}= 5.797+ 0.732X_1 + 0.895X_2 + 0.543X_3 + 0.963X_{4+} \varepsilon$

Where Y_{ij} = Utilization of Essential Health Services

X_1= Health care workers (HRH)

X_2= Drugs and Medical Supplies

X_3= Health Infrastructure

X_4 = Organizational Practices

β_0 = is the regression intercept

β_1, β_2, β_3 β_4, are regression gradients

Ɛ is the error term.

4.5.2 Chi-Square Test of Association

The chi square Test was used to establish the association between the independent and dependent variables which is significant in statistics (Moore, at el,.2013). The independence of Chi-square test determined the likelihood of a relationship between variables in the categories which utilize a table of contingencies. The subsets of a particular variable exist within the rows, while the subsets for other elements exist within the columns. Every element requires two or more subsets. Every cell shows the entire count of incidences for a particular pair of sets. The values are as follows.

X^2 – Chi square test value

Df – degree of freedom

P value – the smallest level of significance possible.

4.5.2.1 Health Workers

Chi square test of association was carried out between the failures by the facilities to provide essential services due to unavailability of drugs, medical supplies or equipment and key

indicators was carried. The key indicators that were considered included availability of policies, presence of operational ambulance, availability of facility for special needs, lead time for restocking and hospital visited. The null hypothesis is that there is no association against the alternative that there is some association between the dependent and independent variables. Table 46 presents these results

Table 34: Association Between Failure to Provide Essential Services and Key Indicators

How often does the facility fail to provide essential services to due unavailability of drugs, medical supplies or equipment									
Variables	categories	Can't tell (%)	Few times (%)	Many times,	Patients informed to buy the supplies	Refer patient to another facility	x^2	Df	P value
Availability of policies guiding procurement process	No	3(13.6)	0	1(4.5)	12(54.5)	6(27.3)	27.963	4	0.000
	Yes	7(9.6)	18(24.7)	31(32.6)	30(41.1)	14(19.2)			
Operational ambulance	No	0	4(28.6)	2(14.3)	5(35.7)	3(21.4)	6.497	4	0.165
	Yes	10(12.3)	14(17.3)	29(35.8)	21(25.9)	7(8.6)			
Facility for special needs	No	4(12.5)	5(15.6)	5(15.6)	13(40.6)	5(15.6)	9.027	4	0.06
	Yes	6(9.5)	13(20.6)	26(41.3)	13(20.6)	5(7.9)			
Lead time for restocking	24hrs	0	5 (50)	5(50)	0	0	41.312	16	0.000
	1 week	0	3(33.3)	1(11.1)	4(44.4)	1(11.1)			
	2-3 wks.	5(31.3)	3(18.8)	8(50)	0	0			
	4 weeks	0	1(7.1)	2(14.3)	7(50)	4(28.6)			
	>4 weeks	5(10.9)	6(13)	15(32.6)	15(32.6)	5(10.9)			

Hospital	CGPH	10(13.5)	18(24.3)	30(40.5)	13(17.6)	3(4.1)	39.434	4	0.000
	Tudor	0	0	1(4.8)	13(61.9)	7(33.3)			

Source: (*Research 2024)*

Table 34 below shows that their significant associations (p value less than 0.05) between failures by the facilities to provide essential services due to unavailability of drugs, medical supplies or equipment and three of the key indicators was carried. These indicators were considered included availability of policies, lead time for restocking and hospital visit. Failure to provide essential services was higher among cases where there are no policies than where there are policies guiding procurement. The proportions of those being referred to another facility or told to buy supplies is higher in cases where there are no policies than where there are policies guiding procurement. Facilities which take longer to restock are more likely to fail to provide essential services compared to those who take shorter time to restock. Tudor Sub County hospital is more likely to fail to provide essential services compared to Coast General Teaching and Referral Hospital, thus utilization of essential is not enabled.

4.5.2.2 Association Between Enough Health Workers and Key Indicators

The Chi square test of association was carried out between the availability of enough health workers and key indicators was carried. The key indicators that were considered waiting period for registration to access essential services, waiting period for registration to access essential services (emergency, amp and acute cases), waiting period for registration to access essential services (routine checkups) and waiting period for registration to access essential services (chronic diseases). The null hypothesis is that there is no association against the

alternative that there is some association between the dependent and independent variables. Table 35 presents these results

Table 35: Association Between Enough Health Workers and Key Indicators

Does the Hospital have enough healthcare workers						
Variables	Categories	No (%)	Yes (%)	x^2	Df	P value
Waiting period for registration to access essential services	Immediately	17(23.9)	6(25)	8.838	4	0.065
	1-2hrs	29(40.8)	13(54.2)			
	2-3hrs	6(8.5)	1(4.2)			
	3-4hrs	15(100)	0			
	4-5hrs	4(5.6)	4(16.7)			
Waiting period for registration to access essential services (emergency, and acute cases	Immediately	21(29.6)	16(66.7)	12.907	5	0.024
	1-2hrs	14(19.7)	3(12.5)			
	1-2 hrs	25(35.2)	4(16.7)			
	2-3hrs	9(12.7)	0			
	3-4hrs	1(1.4)	1(4.2)			
	4- 5hrs	1(1.4)	0			
Waiting period for registration to access essential services (routine checkups)	Immediately	14(19.7)	8(33.3)	2.361	3	0.501
	1hr	28(39.4)	9(37.5)			
	2hrs	22(31)	6(25			
	3-4hrs	7(9.9)	1(4.2)			
Waiting period for registration to access essential services (chronic diseases)	Immediately	8(11.3)	13(54.2)	22.497	4	0.000
	1hr	30(42.3)	9(37.5)			

2hrs	22(31)	1(4.2)
3-4hrs	6(8.5)	1(4.2)
Above 4hrs	5(7)	0

Source: (*Research 2024)*

Results from Table 35 show that there was a significant association between having enough health workers and waiting period for registration to access essential services (emergency, and acute cases) and waiting period for registration to access essential services (chronic diseases). Patients tend to take less time to get access to essential services where there is enough health workers compared to cases where there are not enough health workers.

4.5.2.3 Association Between the Professional Skills of Health Workers and Key Indicators

The Chi square test of association was carried out between professional skills of health workers enhancing provision of essential health services and key indicators was carried out. The key indicators that were considered waiting period for registration to access essential services, waiting period for registration to access essential services (emergency, and acute cases), waiting period for registration to access essential services (routine checkups) and waiting period for registration to access essential services (chronic diseases). The null hypothesis is that there is no association against the alternative that there is some association between the dependent and independent variables. Table 36 presents these results

Table 36: Association Between the Skills of Health Workers and Key Indicators

Do your professional skills enhance the provision of essential health services and its utilization?						
Variables	categories	No (%)	Yes (%)	x^2	Df	P value
Waiting period for registration to access essential services	Immediately	5(33.3)	18(22.5)	13.283	4	0.01
	1-2hrs	2(13.3)	40(50)			
	2-3hrs	3(20)	4(5)			
	3-4hrs	5(33.3)	10(12.5)			
	4-5hrs	0	8(10)			
Waiting period for registration to access essential services (emergency, and acute cases	Immediately	2(13.3)	35(43.8)	12.719	5	0.026
	1hr	1(6.7)	16(20)			
	1-2hrs	10(66.7)	19(23.8)			
	2-3hrs	2(13.3)	7(8.8)			
	3-4hrs	0	2(2.5)			
	4-5hrs	0	1(1.3)			
Waiting period for registration to access essential services (routine checkups)	Immediately	5(33.3)	17(21.3)	5.725	3	0.123
	1hr	3(20)	34(42.5)			
	2hrs	7(46.7)	21(26.3)			
	3-4hrs	0	8(10)			
Waiting period for registration to access essential services (chronic diseases)	Immediately	1(6.7)	20(25)	8.692	4	0.069
	1hr	11(73.3)	28(35)			
	2hrs	2(13.3)	21(26.3)			
	3-4hrs	0	7(8.8)			
	Above 4hrs	1(6.7)	4(5)			

Source: (*Research 2024)*

Results from Table 36 show that there was a significant association between having health workers professional skills enhancing provision of essential health services and waiting period for registration to access essential services and waiting period for registration to access essential services (emergency, and acute cases). Patients tend to take less time to get access to essential services where health workers professional skills enhance provision of essential services and vice versa, and utilization of essential services are done.

4.5.3 Patient factors

4.5.3.1 Association Between Missing Essential Health Services Due To Unavailability of Drugs, Medical Supplies or Key Equipment and Key Indicators

Chi square test of association was carried out between missing essential health services due to unavailability of drugs, medical supplies or key equipment and key indicators. The key factors that were considered included frequency of visiting the facility, hospital has enough healthcare workers, waiting period for registration to access essential health services, Waiting period for registration to access essential services (emergency, amp and acute cases), Waiting period for registration to access essential services (routine checkups), Waiting period for registration to access essential services (chronic diseases) Waiting period for registration to access essential services (specialized), afford the basic costs of essential medical services and Time taken to reach the facility

Table 37: Association Between Missing Essential Health Services Due To Unavailability of Drugs, Medical Supplies or Key Equipment and Key Indicators

Do you happen to miss essential health services due to unavailability of drugs, medical supplies, or equipment							
Variables	Categories	Cannot tell (%)	Few times (%)	Many times	x^2	Df	P value
Frequency of visiting the facility	Every week	0	78(46.4)	101(21.7)	86.532	12	0.000
	2-4 weeks	3(50)	83(49.4)	317(68.2)			
	5-6 weeks	1(16.7)	7(4.2)	29(6.2)			
	6 weeks	0	0	6(1.3)			
	3 months	0	0	1(0.2)			
	Once a year	1(16.7)	0	2(0.4)			
	When sick	1(16.7)	0	9(1.9)			
Hospital has enough healthcare workers	No	2(33.3)	107(63.7)	170(36.6)	37.194	2	0.000
	Yes	4(66.7)	61(36.3)	295(63.4)			
Waiting period for registration to access essential health services	1-2hrs	6(100)	165(98.2)	41(8.8)	457.08	2	0.000
	2-3hrs	0	3(1.8)	424(91.2)			
Waiting period for registration to access essential services	Immediately	5(83.3)	167(99.4)	36(7.7)	502.293	2	0.000
	1-2hr	0	0	412(88.6)			
	1hr	1(16.7)	1(0.6)	3(0.6)			

(emergency, amp and	2-3	0	0	12(2.6)			
acute cases	4-5hrs	0	0	2(0.4)			
Waiting period for	Immediately	2(33.3)	26(15.5)	406(87.3)	349.583	2	0.000
registration to access	1hr	3(50)	139(82.7)	44(9.5)			
essential services (routine	2hrs	0	3(1.8)	12(2.6)			
checkups)	4hrs&above	1(16.7)	0	3(0.6)			
Waiting period for	Immediately	2(33.3)	32(19)	76(16.3)	27.322	6	0.000
registration to access	1hr	3(50)	136(81)	357(76.8)			
essential services (chronic	2hrs	0	0	26(5.6)			
diseases)	Above 4hrs	1(16.7)	0	6(1.3)			
Waiting period for	Immediately	2(33.3)	98(58.3)	99(21.3)	100.593	6	0.000
registration to access	1hr	3(50)	70(41.7)	329(70.8)			
essential services	2hrs	0	0	32(6.9)			
(specialized)	Above 4hrs	1(16.7)	0	5(1.1)			
afford the basic costs of	No	2(33.3)	73(43.5)	431(92.7)	189.245	2	0.000
essential medical services	Yes	4(66.7)	95(56.5)	34(7.3)			
Time taken to reach the	1hr	4(66.7)	105(62.5)	33(7.1)	440.630	4	0.000
facility	2-3hrs	1(16.7)	61(36.3)	14(3)			
	4-5hrs	1(16.7)	2(1.2)	418(89.9)			

Source: (*Research 2024)*

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents a summary of the findings, conclusions and recommendations based on the analysis of the findings from the objectives of the research which were how human resources for health influence utilization of health services, how availability of drugs influence utilization of essential health services, how the role of health infrastructure affect utilization of health services and how the relevance of organizational practices influence utilization of health services in CGTRH and Tudor subcounty public hospital in Mombasa county, Kenya.

5.2 Summary

While Kenya devolved its health care services in line with the 2010 constitution to the county level, major strides have been made in the public health care sector with increase in many health care services provision, yet there are still various challenges that still hamper the provision and utilization of health care services. The influence of human resource for health, availability of drugs and medical supplies, health infrastructure and organizational practices were analyzed.

5.2.1 The Influence of Health Workforce in the Utilization of Essential Medical Services.

The multiple regression analysis output provides evidence that all factors considered (health care workers (HRH) (β=0.732, p=0.001), meaning that a relative effect on utilisation of essential services. If there are healthcare workers at 100%, then there would be 73.2%

increase in the utilisation of essential services and utilisation. Hence Health care workers contribute positive to utilisation of essential services.

From the findings, adequate presence of enough health care workers is essential in the provision and utilization of essential medical services in both hospitals. There is a need for more health workers to cater for the increasing population visiting the two hospitals. The education level of most health care workers is at diploma and degree level and most health care workers are satisfied when they are motivated. Inadequate health care workers lead to a smaller number of workers at work, who become fatigued and less motivated due to serving long queues of patients thus resulting in essential services not being utilized and patients not being able to access the much-needed essential care. Patients who feel dejected might not be able to utilize essential health care services even though they are available. Therefore, the provision of essential health care services can stall due to health care professionals being overworked and recruitment not being done timely leading to exhaustion and demotivation of health care workers at work. The regression model result shows that utilization of health care services is directly influenced by human resources for health. A positive change in any of the human resources for health variables such as adequate number of health workers, job satisfaction, and level of education will lead to a positive influence in the utilization of essential health services.

5.2.2 The Availability of Drugs and Medical Supplies in The Utilization of Essential Health Care Services.

Drugs and medical supplies being available at 100%, indicating a significant increase in utilisation of essential services at 89.5%. Availability of drugs and medical supplies is the cornerstone for utilization of health care services. From the analysis obtained, there are

insufficient drugs within the two hospitals and most times patients are informed to buy drugs and medical supplies from elsewhere, thus making provision and utilization of service delivery a challenge. While both hospitals have procurement systems and processes in place, supplies to be delivered have a lead time of four weeks after an order is prepared. This can have deterrent effect in that drugs which are brought in after over four weeks can expire within the facilities as demand can decrease and in addition patients might not end up buying the drugs due to affordability factor. Other factors include patients, might not come back for the same medications as their health condition might have deteriorated further. Utilization of essential services is directly influenced by the availability of drugs and medical supplies, procurement processes leading to an increase in uptake of essential services.

5.2.3 The Role of Health Infrastructure in The Utilization of Essential Services

Provision of health care services is significantly contributed by health infrastructure. From the study, a 54.4% increase in utilisation of essential services can be expanded when health infrastructure facilities are available and can make a significant contribution in provision and utilisation of essential healthcare services. While the existence of ambulances is there, many of the respondents informed that they are not operational, meaning that during an emergency for pick up for a patient, ambulance services are not available from the two hospitals. This results in services at the hospitals not being utilized. Basic medical equipment is available within the two hospitals and timely maintenance being carried. This means that medical equipment is functional and well utilized. Directional labelled and flow directional consultation rooms being easily accessible contributed to positive utilization of essential services as patients can get services in due time without getting fatigue or frustrated by

moving around the corridors looking for intended services. Examples include laboratory services, the MCH clinic room, radiology room etc.

A positive change in the above variables, i.e. provision of medical equipment, availability of ambulance services which are operational, flow direction, well labelled and easily accessible consultation and diagnostic rooms contribute to positive utilization of essential health services.

5.2.4 The Importance of Organizational Practices in The Utilization of Essential Health Care Services

For Organizational practices, a 96.3 % increase in utilisation of essential services are enabled when there are an efficient and effective organisational practise within the two hospitals. From the responses obtained, the patient's waiting period is approximately 30 minutes to one hour to get consultation. For different cadres of essential services such as routine checkup, it was around two hours, while emergency services were immediate. For chronic and specialized clinics, it took longer to seek services. Patients cited challenges to move from one room to another and the various stages they need to undergo to access services. Thus, consultation process is a major determinant of receiving services and utilization. Thus, in the organization practices, patient waiting time should be reduced to increase patients seeking essential services and utilization.

Flow of information is another factor which elongates patient waiting period as patient must wait for diagnostic results to be kept into the health information system, for doctors and nurses to give further treatment. The longer the wait for the flow of information, the longer the patient waits for treatment. Communication given to patients and fellow health care

workers in a timely manner can enhance patients' satisfaction and increase utilization of health care services.

Lastly, the availability of funds is a major contributor for healthcare services as observed from the results obtained. Lack of funds creates a void for facilities to give the basic essential services as it cascades into lack of drugs and medical supplies, lack of equipment and a less motivated health workforce. This translates to under-utilization of health care services.

5.3 Conclusion

From the discussion and findings above, the study found out that the utilization of essential services is directly influenced by the human resources for health, availability of drugs and medical supplies, the role of health infrastructure and the relevance of organizational practices in place. Thus, provision of essential healthcare services and utilization is directly linked to affordability, availability of drugs and accessibility. Utilization of essential health services is increased when patients receive the essential healthcare services which is availability, affordable and accessible and patients are treated as per required guidelines.

It is also evident in the study's conceptual framework, that utilization of essential services has a component effect on affordability, availability and access of care, direct link to as well as competent and skilled health workforce, availability of drugs and medical supplies, availability of health infrastructure and organizational practices which are convenient.

5.4 Recommendations

As a result of this study, recommendations were that healthcare resources are critical to the provision and utilization of essential services and reduce on the long queues of patients seeking services, hence adequate number of healthcare workers is important. To address gaps

and challenges on availability of drugs and medical supplies and ensure regular stocks to cater for the population seeking essential services. Availability of funds for the two health facilities is critical to cater for adequate hospital infrastructure, availability of drugs and medical supplies and additional funds needed to ensure to cater for the bigger populations serving within the vicinity.

5.5 Suggestions for Further Studies

The researcher suggests similar areas for further study based on the outcome of the research work. Further studies should be considered that influence the utilization of essential services which were not considered in this study. A similar study was done by a student of Mount Kenya university on determinants of utilization of reproductive health services among women of reproductive age in South Sudan's selected public health facilities (Onak, E, 2024).

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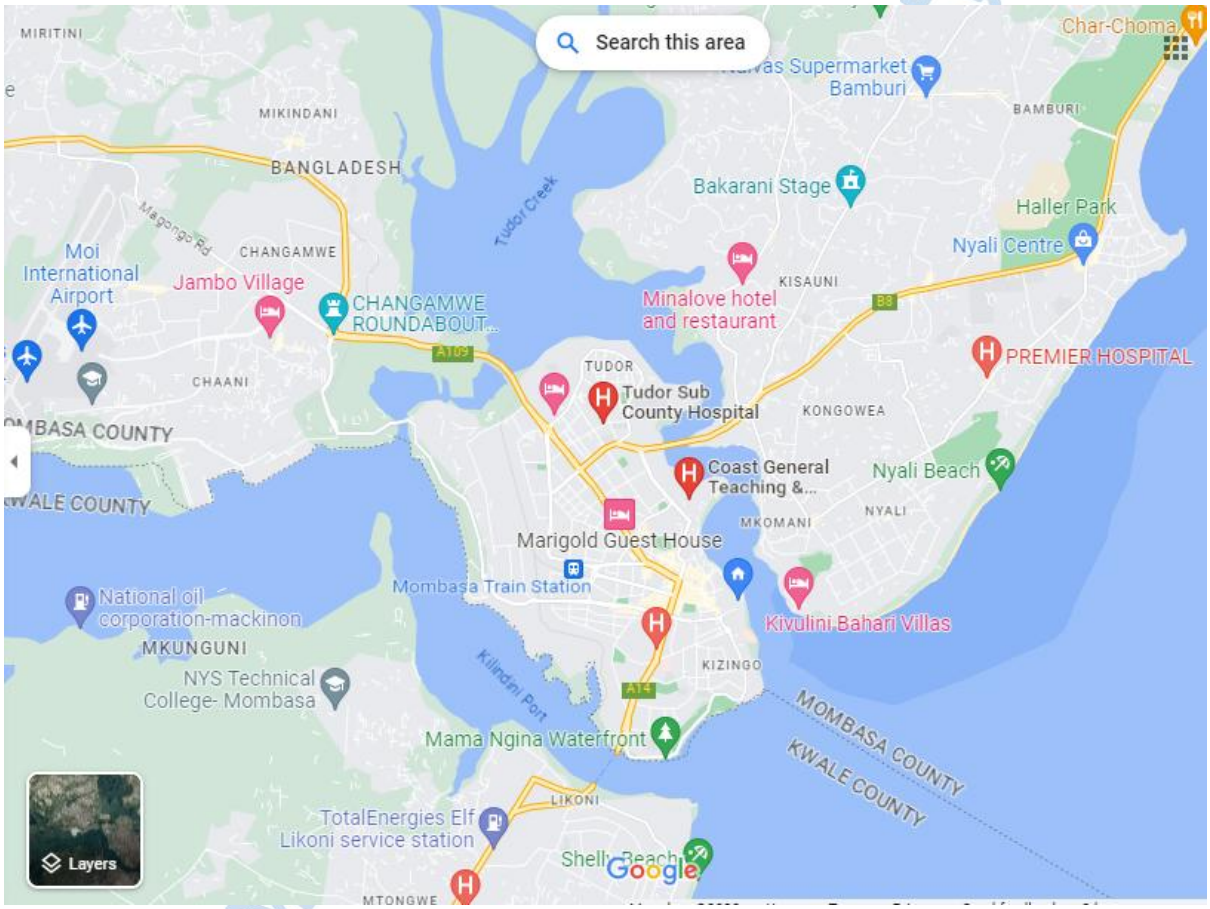
APPENDICES

Appendix I: Maps

Map of Mombasa County showing Coast General Referral Hospital and Tudor Sub- County Hospital.

Map – Courtesy of Google Maps.



Appendix II: Consent and Assent Forms

a. Consent Form

Arifa Turabali

P.O. BOX 84609 - 80100 MOMBASA

Mount Kenya University

Thika, Kenya

SUBJECT: COGNIZANT AGREEMENT

Dear Respondent,

My name is Arifa Turabali, and I attend Mount Kenya University for my master's in public health. The topic of my study is "study of factors influencing utilization of essential health services at Coast General Provincial and Tudor Sub- County public hospitals, Mombasa County, Kenya

To enhance the effectiveness of essential medical services in the public health sector, this research proposal aims to identify the factors that contribute to the use of essential medical services and utilization. It also contributes to the creation of new knowledge regarding the use of vital medical amenities and provides crucial information to leaders and policy makers.

Procedure to be followed:

Respondents will be required to answer the questionnaire provided and have access to department heads to get the key informant interview to address the variables mentioned in the study.

Purely honest engagement is required for the study. There won't be any victimization or penalties for choosing not to contribute, and your choice to withdraw will remain anonymous.

You are always welcome to ask questions about the study. You have the right to ignore any questions and to end the conversation at any time. Without affecting what details, you provide, you are free to leave the study whenever you want.

Constraints and Dangers

You may feel uncomfortable or embarrassed by some of the personal inquiries you will be asked. If this occurs, you have the option of not responding. The interview can be ended at any time. It might take approximately forty minutes to wrap up the interview.

Benefits

By taking part in this investigation, you will aid in our efforts to increase the use of vital services in Mombasa County, Kenya, and other low-income nations in Africa. Nations, communities, and people will gain from higher-quality health care facilities as a result. This field placement is crucial to boosting the use of vital medical services because it will produce novel information in this field that will help decision-makers make decisions based on scientific evidence.

Rewards

Everyone who chooses to take part in the investigation will not receive any compensation.

Privacy

The conversations will take place inside the institution in a discreet setting. The survey responses will be maintained in a secure location at the university without your name being written down.

Identifying Data. You can get in touch with my supervisors at the following numbers and addresses if you are experiencing questions:

a) Professor Suleiman Mbaruk

   Department of Public Health

Mount Kenya University

b) Professor Juma

Department of Public Health

Mount Kenya University

b. Assent Tool for Respondent Under 18 Years.

I have been informed that my parent(s) have given permission for me to participate, if I want to in this study. My participation in this study is voluntary and I have been told that I may stop my participation in this study at any time. If I choose not to participate, it will not affect my treatment or care in any way. I am permitted to ask questions about the study. I agree to take part in the study.

Name of Person Obtaining Assent: _____

Fomu Ya Makubaliano Ya Taarifa

Arifa Turabali

Sanduku La Posta 84609 -80100 MOMBASA

Chuo Kikuu cha Mount Kenya

Thika, Kenya

Kuhusu: Makubaliano Ya Taarifa

Mpendwa Mhojiwa,

Jina langu ni Arifa Turabali, mimi ni mwanafunzi wa MPH kutoka Chuo Kikuu cha Mount Kenya.Ninafanya utafiti wa anwani na mambo yanayoshawishi matumizi ya huduma muhimu za afya katika hospitali ya umma ya Coast General na Tudor katika Kaunti ya Mombasa. Pendekezo hili la utafiti ni muhimu katika kuimarisha matumizi ya huduma

muhimu za afya katika sekta ya afya ya umma kwani itazalisha maarifa mapya katika eneo hili ambalo litawajulisha watoa maamuzi kufanya maamuzi ambayo yana msingi wa ushahidi.

Utaratibu wa kufuatwa:

Kushiriki katika utafiti huu utahitaji kwamba nikuulize maswali na pia nifike idara zote ya hii hospitali kushughulikia vigezo kama ilivyoelezwa katika utafiti. Kushiriki katika utafiti huu itahitaji kwamba nikuulize maswali kadhaa na nitarekodi habari katika orodha ya ukaguzi wa dodoso.

Una haki ya kukataa kushiriki katika utafiti huu. Hutaadhibiwa wala kudhulumiwa kwa kutojiunga na utafiti na uamuzi wako hautatumika dhidi yako wala kukuathiri mahali pako pa kazi. Tafadhali kumbuka kuwa ushiriki katika utafiti ni wa hiari. Unaweza kuuliza maswali yoyote, na unaweza kuacha mahojiano wakati wowote. Unaweza pia kuacha kuwa katika utafiti wakati wowote bila taabu yoyote kwa huduma unazotoa.

Vikwazo na hatari

Baadhi ya maswali utakayoulizwa ni juu ya masuala ya ndani na inaweza kuwa ya aibu au kukufanya uwe na wasiwasi. Ikiwa hii itatokea; Unaweza kukataa kujibu ikiwa utataka. Unaweza pia kuacha mahojiano wakati wowote. Mahojiano yanaweza kuchukua muda wa dakika arabaini kukamilika.

Faida

Ukishiriki katika utafiti huu, utatusaidia kuimarisha matumizi ya huduma muhimu katika Kaunti ya Mombasa, Kenya kama nchi na nchi nyingine za mapato ya chini barani Afrika. Matokeo yake ni, nchi, jamii na watu binafsi watafaidika na kuimarika kwa ubora wa huduma za afya. Kazi hii ni muhimu katika kuimarisha matumizi ya huduma muhimu za afya, kwani

itazalisha maarifa mapya katika eneo hili ambayo yatawajulisha watoa maamuzi kufanya maamuzi bora kwa msingi wa ushahidi.

Zawadi

Hakuna malipo kwa mtu yeyote ambaye anachagua kushiriki katika utafiti huu.

Usiri

Mahojiano yatafanyika katika mazingira ya kibinafsi ndani ya taasisi. Jina lako halitarekodiwa kwenye dodoso hii na maswali yatawekwa mahali salama katika Chuo Kikuu.

Maelezo ya Mawasiliano

Ikiwa una maswali yoyote, unaweza kuwasiliana na wasimamizi wangu ambao majina yao na anwani ni kama ifuatavyo:

Fomu Ya Idhini Kwa Washiriki Walio Chini Ya Miaka 18

Nimejulishwa kuwa mzazi wangu au mlezi wangu ameruhusu niweze kushiriki katika utafiti huu, ikiwa nitakubali. Ninaelewa kwamba, ushiriki wangu katika utafiti huu ni wa hiari. Ninaweza kuchagua kutoshiriki, na sitapata madhara yoyote kwa kufanya hivyo. Nikikubali kushiriki, bado ninaweza kuamua kuacha kushiriki wakati wowote. Kutochangia katika utafiti huu hakutaathiri matibabu au huduma ninayopokea kwa njia yoyote. Naweza kuuliza maswali wakati wowote kama kuna jambo nisilolielewa.

Ninakubali kushiriki katika utafiti huu.

Jina la Mtu Anayepokea Idhini: _____

a) Profesa Mbaruk Ahmed Suleiman

   Idara ya Afya ya Umma

Chuo Kikuu cha Mount Kenya

b) Dr Joseph Juma

Idara ya Afya ya Umma

Chuo Kikuu cha Mount Kenya

Appendix III: Questionnaire

Arifa Turabali

P.O Box 84609-80100

Mombasa

Dear Respondent,

REF: TO STUDY FACTORS INFLUENCING UTILIZATION OF ESSENTIAL HEALTH SERVICES AT COAST GENERAL AND TUDOR SUB-COUNTY PUBLIC HOSPITALS, MOMBASA COUNTY, KENYA

At Mount Kenya University, I'm currently working on a research project with the aforementioned title while also pursuing a master's degree in public health. You have been chosen as a respondent to help with gathering the information and data required for this study. If you have a few a few moments to spare, please take a moment to respond to the following questions. The data submitted will be handled with the strictest confidence and used only for educational uses. Please answer all the questions honestly and without writing your name anyplace on the questionnaire.

We appreciate your time and participation in filling out this form.

Yours sincerely,

Arifa Turabali,

Mount Kenya University

Department of Public Health

A. For The Health Workers at Coast General Teaching and Referral Hospital and Tudor Sub-County Hospital

Instructions: Please answer the questions below in the boxes provided.

Background information (Tick on the text box)

1. Please state your gender

☐ Male ☐ Female

2. Please state your age group

☐ 21 to 30yrs ☐ 31 to 40yrs ☐ 41 to 50yrs ☐ 51 to 60yrs

3. What is your cadre/ job title?

☐ Medical Officer ☐ Clinical Officer ☐ Nurse ☐ Pharmacist

☐ Biomedical Officer ☐ Information Officer ☐ Nutritionist ☐ Record Officer

☐ Receptionist

Other Specify ……

4. Please state the highest formal completed education.

☐ Certificate ☐ Diploma ☐ Degree ☐ Master's Degree ☐ PhD

5. Please state the hospital within which you are currently employed.

…….

6. For how long have you been employed at the facility mentioned above?

☐ 1 to 2yrs ☐ 3 to 4yrs ☐ 5 to 6yrs ☐ More than 6yrs

7. Does the hospital have enough health care workers, in your opinion?

☐ Yes ☐ No

8. How often do you get in-service training?

☐ Every 6 months ☐ 1 to 2yrs ☐ 3 to 4yrs ☐ 5 to 6yrs ☐ None

9. Do your professional skills enhance the provision of essential health services and utilization?

☐ Yes ☐ No

If indicated yes in the above, please elaborate on the same.

……..

10. In the table below, please indicate how the following affects the provision of health services and utilization.

0–Very Strongly Disagree 1–Neutral 2–Agree 3–Slight Agree 4–Very Strongly Agree

	Very Strongly Disagree ☹	Neutral 😐	Agree 🙂	Slightly Agree 😊	Very Strongly Agree 🤩
Poor Organizational Practices					
Lack of funds					
Health workers trained adequately					
Inadequate medical equipment					
Unavailability of drugs and medical supplies					

11. Are all drugs and medical supplies readily available within the facility?

☐ Yes ☐ No

12. Please explain how the following influences improved the use of essential medical services and motivation for medical professionals in the table below.

0–Very Strongly Disagree 1–Neutral 2–Agree 3–Slight Agree 4–Very Strongly Agree

	Very Strongly Disagree ☹	Neutral 😐	Agree 🙂	Slightly Agree 😊	Very Strongly Agree 🤩
Clear communication channels					
Clear flow of health information system					
Adequate numbers of health workers					
Frequent workshop & trainings					
Incentives					

13. In the table, please state how the below can affect utilization and provision of essential services.

0–Very Strongly Disagree 1–Neutral 2–Agree 3–Slight Agree 4–Very Strongly Agree

	Very Strongly Disagree ☹	Neutral 😐	Agree 🙂	Slightly Agree 😊	Very Strongly Agree 🤩
Timely Patient data flow					
Lack of proper infrastructure					
Timely maintenance of medical equipment					
Frequent stock out of essential hospital stocks					

14. What is the waiting period for consultation to access the essential health services?

☐ 1hr ☐ 2 – 3hrs ☐ 4 – 5hrs ☐ 4hrs and above

15. How long does a patient have to wait to access the following essential services below?

	Immediately	1 hour	2 hours	3-4 hour	4 hours and above
Emergency & acute cases					
Routine check-up					
Chronic cases					

Specialized clinics					

16. Is there a procurement procedure in place?

☐ Yes ☐ No

If yes, specify the details …….

17. Are there policies that guide the procurement process of drugs, medical supplies, and equipment?

☐ Yes ☐ No

18. What is the lead time for drugs and medical supplies to be restoked?

☐ One Week ☐ 2 – 3 Weeks ☐ 4 Weeks ☐ Over 4 Weeks

19. Can the average patient afford the basic costs of essential medical services?

☐ Yes ☐ No

20. How often does the facility fail to provide essential services due to unavailability of drugs, medical supplies, or equipment?

☐ None ☐ A few times ☐ Many times, ☐ Cannot tell

21. How is the above situation handled due to unavailability of drugs and medical suppliers?

☐ Patient informed to wait for supplies to be restocked

☐ Patient informed to buy the supplies

☐ Refer patient to another facility

22. What is the severity of the following concerns that have an impact on the purchase of medications, health care supplies, and equipment?

0–Very Strongly Disagree 1–Neutral 2–Agree 3–Slight Agree 4–Very Strongly Agree

	Very Strongly Disagree ☹	Neutral 😐	Agree 🙂	Slightly Agree 😊	Very Strongly Agree 🤩
Corruption in procurement process					
Policies poorly implemented					
Substandard supplies					
Transport costs					

23. Is there a flow diagram for the location of patients' rooms to direct from one place to another?

☐ Yes ☐ No

24. Are all rooms well-labelled?

☐ Yes ☐ No

25. Are the rooms easily accessible to get essential health services?

☐ Yes ☐ No

26. Does the hospital offer ambulance services?

☐ Yes ☐ No

27. Is the ambulance available 24/7?

☐ Yes ☐ No

28. Is the ambulance currently operational?

☐ Yes ☐ No

29. Does the hospital have facilities to cater to patients with special needs?

☐ Yes ☐ No

30. Does the devolved government offer adequate funds for smooth operation of the facility?

☐ Yes ☐ No

31. What are some of the difficulties that the public has in using and gaining access to fundamental medical care services?

……

……

……

B. For The Patient

Instructions: Please respond to the following inquiries in the spaces provided.

Background information (Tick on the text box)

1. Please specify your gender.

☐ Male ☐ Female

2. Please state your age group

☐ 0-20yrs ☐ 21-30yrs ☐ 31-40yrs ☐ 41-50yrs ☐ 51-60yrs ☐ Over 60yrs

3. How often do you visit the facility?

☐ Every week ☐ Every 2-4 weeks ☐ 5-6 weeks ☐ Every 6 weeks

Other Specify ……

4. Do you feel the hospital has enough health care workers?

☐ Yes ☐ No

5. Please state the hospital within which you are currently visiting for treatment.

…….

6. How many times have you visited to get medical services in the facility as indicated above.

☐ 1 to 2 times ☐ 3 to 4 times ☐ 5 to 6 times ☐ More than 6 times

7. Does the hospital have enough health care workers, in your opinion?

☐ Yes ☐ No

8. In the table below, please indicate how the following affects the provision of health services and utilization.

0–Very Strongly Disagree 1–Neutral 2–Agree 3–Slight Agree 4–Very Strongly Agree

	Very Strongly Disagree ☹	Neutral 😐	Agree 🙂	Slightly Agree 😊	Very Strongly Agree 🤩
Poor Organizational Practices					
Lack of funds					
Health workers trained adequately					
Inadequate medical equipment					
Unavailability of drugs and medical supplies					

9. Do you get all the drugs and medical supplies readily available within the facility?

☐ Yes ☐ No

10. Please rate how much of the following you concur with motivates health care professionals and has a positive impact on how often people use basic health care services in the table below.

0–Very Strongly Disagree 1–Neutral 2–Agree 3–Slight Agree 4–Very Strongly Agree

	Very Strongly Disagree ☹	Neutral 😐	Agree 🙂	Slightly Agree 😊	Very Strongly Agree 🤩
Clear communication channels					
Clear Flow of health information system					
Adequate numbers of health workers					
Frequent workshop & trainings					
Incentives					

11. In the table, please state you think the below can affect utilization and provision of essential services.

0–Very Strongly Disagree 1–Neutral 2–Agree 3–Slight Agree 4–Very Strongly Agree

	Very Strongly Disagree ☹	Neutral 😐	Agree 🙂	Slightly Agree 😊	Very Strongly Agree 🤩
Timely Patient data flow					

Lack of proper infrastructure					
Timely maintenance of medical equipment					
Frequent stock out of essential hospital stocks					

12. What is the waiting period to access consultation to access essential health services?

☐ 1hr ☐ 2 – 3hrs ☐ 3 – 4hrs ☐ More than 4hrs

13. How long do you have to wait to access the following essential services below?

	Immediately	1 hour	2 hours	3-4 hour	4 hours and above
Emergency & acute cases					
Routine check-up					
Chronic cases					
Specialized clinics					

14. Can you afford the basic costs of essential medical services?

☐ Yes ☐ No

15. Do you happen to miss essential health services due to unavailability of drugs, medical supplies, or equipment?

☐ None ☐ A few times ☐ Many times, ☐ Cannot tell

16. Do you get the below situation when there is unavailability of drugs and medical suppliers?

☐ Informed to wait for supplies to be restocked

☐ Informed to buy medical supplies

☐ Referred to another facility

17. In the table below, to what level do you agree to the following issues that affect the procurement(purchase) of drugs, medical supplies, and equipment.

0–Very Strongly Disagree 1–Neutral 2–Agree 3–Slight Agree 4–Very Strongly Agree

	Very Strongly Disagree ☹	Neutral 😐	Agree 🙂	Slightly Agree 😊	Very Strongly Agree 🤩
Corruption in procurement process					
Policies poorly implemented					
Substandard supplies					
Transport costs					

18. Is there a flow diagram for the location of rooms to direct you from one place to another?

☐ Yes ☐ No

19. Are all rooms well-labelled?

☐ Yes ☐ No

20. Are the rooms easily accessible to get essential health services?

☐ Yes ☐ No

21. Does the hospital offer ambulance services?

☐ Yes ☐ No

22. Is the ambulance available 24/7?

☐ Yes ☐ No

23. Is the ambulance currently operational?

☐ Yes ☐ No ☐ Unsure

24. How long does it take to reach the facility?

☐ 1hr ☐ 2 – 3hr ☐ 4 – 6hr ☐ More than 6hrs

25. Does the hospital have facilities to cater to patients with special needs?

☐ Yes ☐ No ☐ Unsure

26. Have you ever been referred to another facility due to unavailability of essential services?

☐ Yes ☐ No

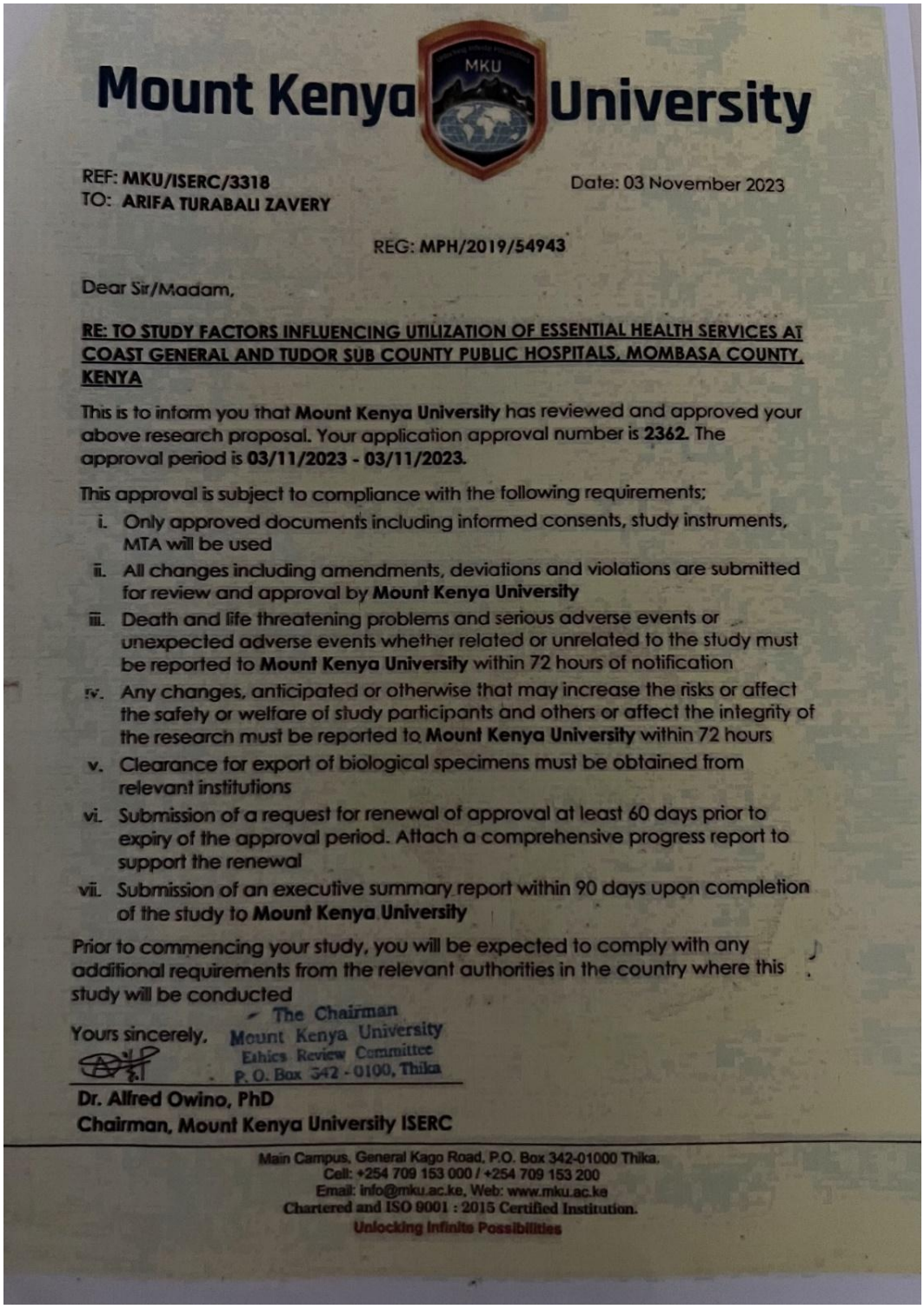
27. What are a few of the difficulties the public has using and gaining access to basic health care services?

……

……

……

Appendix IV: Approval and Authorization Letter by Mt Kenya University



Mount Kenya University

REF: **MKU/ISERC/3318**
TO: **ARIFA TURABALI ZAVERY**

Date: 03 November 2023

REG: **MPH/2019/54943**

Dear Sir/Madam,

RE: TO STUDY FACTORS INFLUENCING UTILIZATION OF ESSENTIAL HEALTH SERVICES AT COAST GENERAL AND TUDOR SUB COUNTY PUBLIC HOSPITALS, MOMBASA COUNTY, KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2362**. The approval period is **03/11/2023 - 03/11/2023.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to comply with any additional requirements from the relevant authorities in the country where this study will be conducted

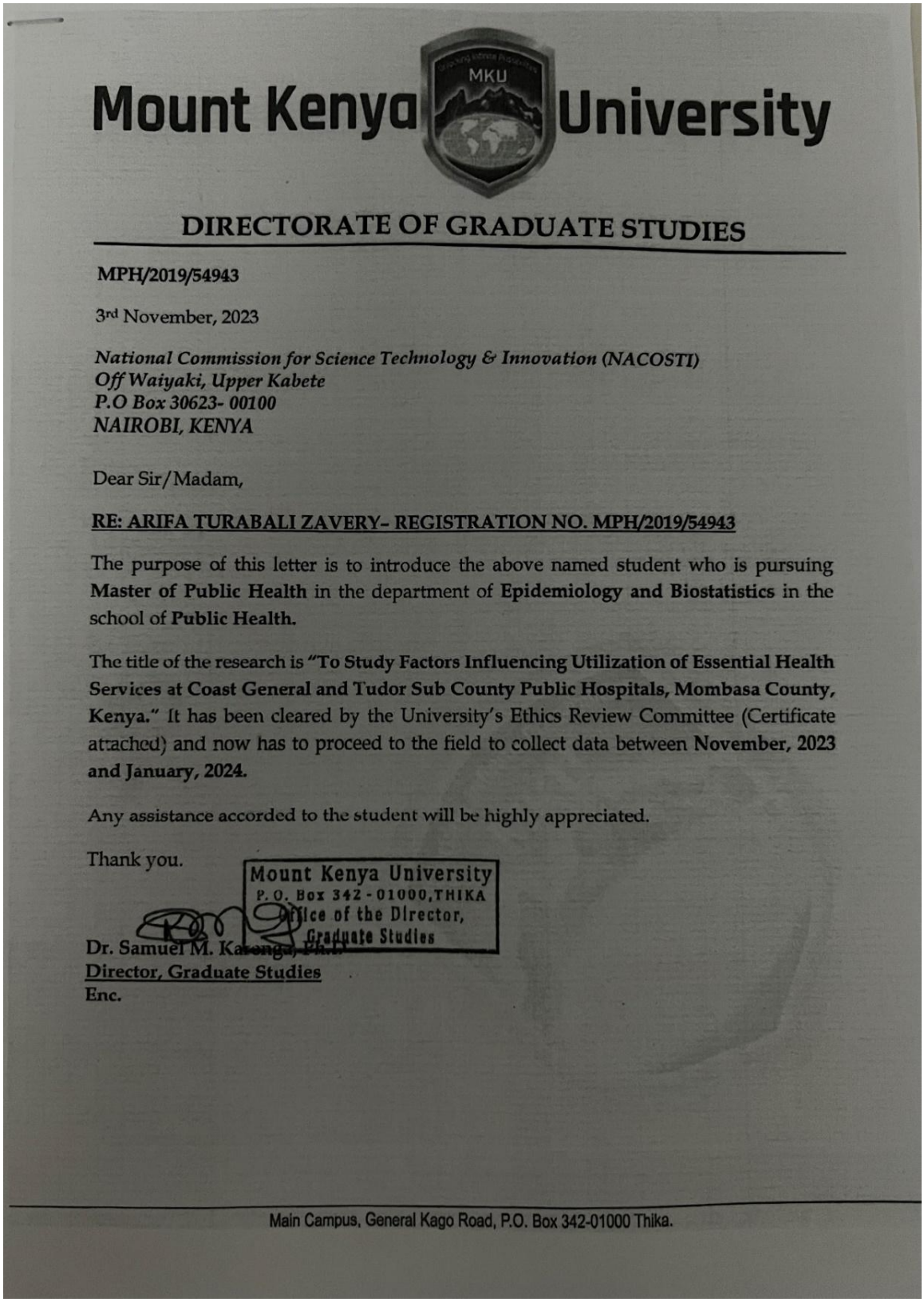
Yours sincerely,

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Cell: +254 709 153 000 / +254 709 153 200
Email: info@mku.ac.ke, Web: www.mku.ac.ke
Chartered and ISO 9001 : 2015 Certified Institution.
Unlocking Infinite Possibilities

Appendix V: Introduction Letter to NACOSTI



Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MPH/2019/54943

3rd November, 2023

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki, Upper Kabete
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,

RE: ARIFA TURABALI ZAVERY- REGISTRATION NO. MPH/2019/54943

The purpose of this letter is to introduce the above named student who is pursuing **Master of Public Health** in the department of **Epidemiology and Biostatistics** in the school of **Public Health.**

The title of the research is **"To Study Factors Influencing Utilization of Essential Health Services at Coast General and Tudor Sub County Public Hospitals, Mombasa County, Kenya."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **November, 2023 and January, 2024.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P. O. Box 342 - 01000, THIKA
Office of the Director,
Graduate Studies

Dr. Samuel M. Karonga, Ph.D
Director, Graduate Studies
Enc.

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.

Appendix VI: Research Permit – NACOSTI

Ref: 459768

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **459768**

Date of Issue: **05/August/2024**

RESEARCH LICENSE

This is to Certify that Ms.. ARIFA TURABALI TURABALI of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Mombasa on the topic: STUDY OF FACTORS INFLUENCING UTILIZATION OF ESSENTIAL HEALTH SERVICES AT COAST GENERAL AND TUDOR SUB COUNTY PUBLIC HOSPITALS, MOMBASA COUNTY, KENYA for the period ending : 05/August/2025.

License No: **NACOSTI/P/24/38538**

459768

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

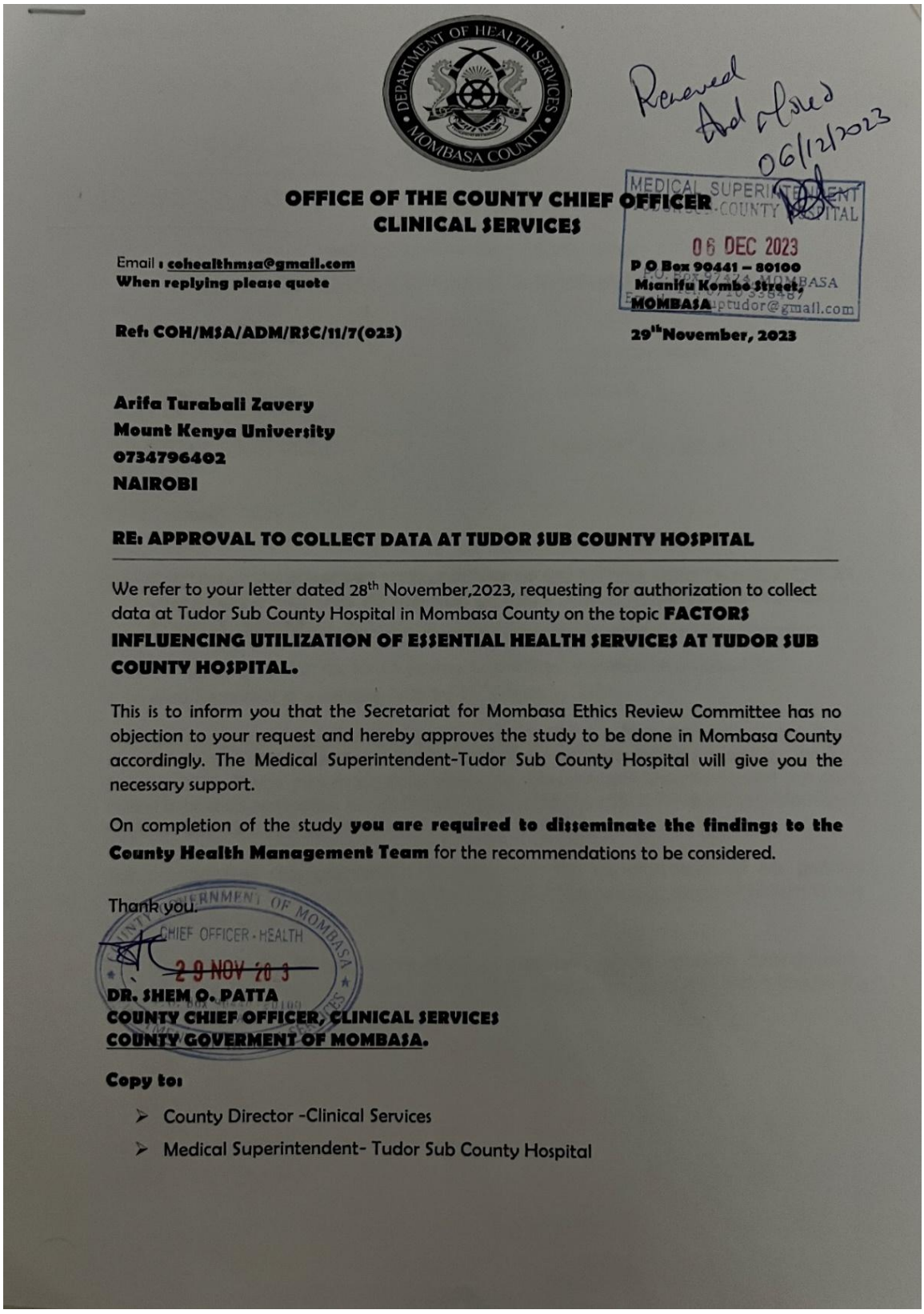
Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix VII: Approval Letter – Tudor Sub-County Hospital

REF: COH/MSA/ADM/RSC/11/7/ (023)



DEPARTMENT OF HEALTH SERVICES
MOMBASA COUNTY

Renewed
Approved
06/12/2023

OFFICE OF THE COUNTY CHIEF OFFICER
CLINICAL SERVICES

MEDICAL SUPERINTENDENT
COUNTY HOSPITAL
06 DEC 2023
P.O. BOX 87424 MOMBASA

Email : cohealthmsa@gmail.com
When replying please quote

P O Box 90441 – 80100
Mtanifu Kombo Street,
MOMBASA

Ref: COH/MSA/ADM/RSC/11/7(023)

29th November, 2023

Arifa Turabali Zavery
Mount Kenya University
0734796402
NAIROBI

RE: APPROVAL TO COLLECT DATA AT TUDOR SUB COUNTY HOSPITAL

We refer to your letter dated 28th November,2023, requesting for authorization to collect data at Tudor Sub County Hospital in Mombasa County on the topic **FACTORS INFLUENCING UTILIZATION OF ESSENTIAL HEALTH SERVICES AT TUDOR SUB COUNTY HOSPITAL.**

This is to inform you that the Secretariat for Mombasa Ethics Review Committee has no objection to your request and hereby approves the study to be done in Mombasa County accordingly. The Medical Superintendent-Tudor Sub County Hospital will give you the necessary support.

On completion of the study **you are required to disseminate the findings to the County Health Management Team** for the recommendations to be considered.

Thank you.

CHIEF OFFICER - HEALTH
29 NOV 2023

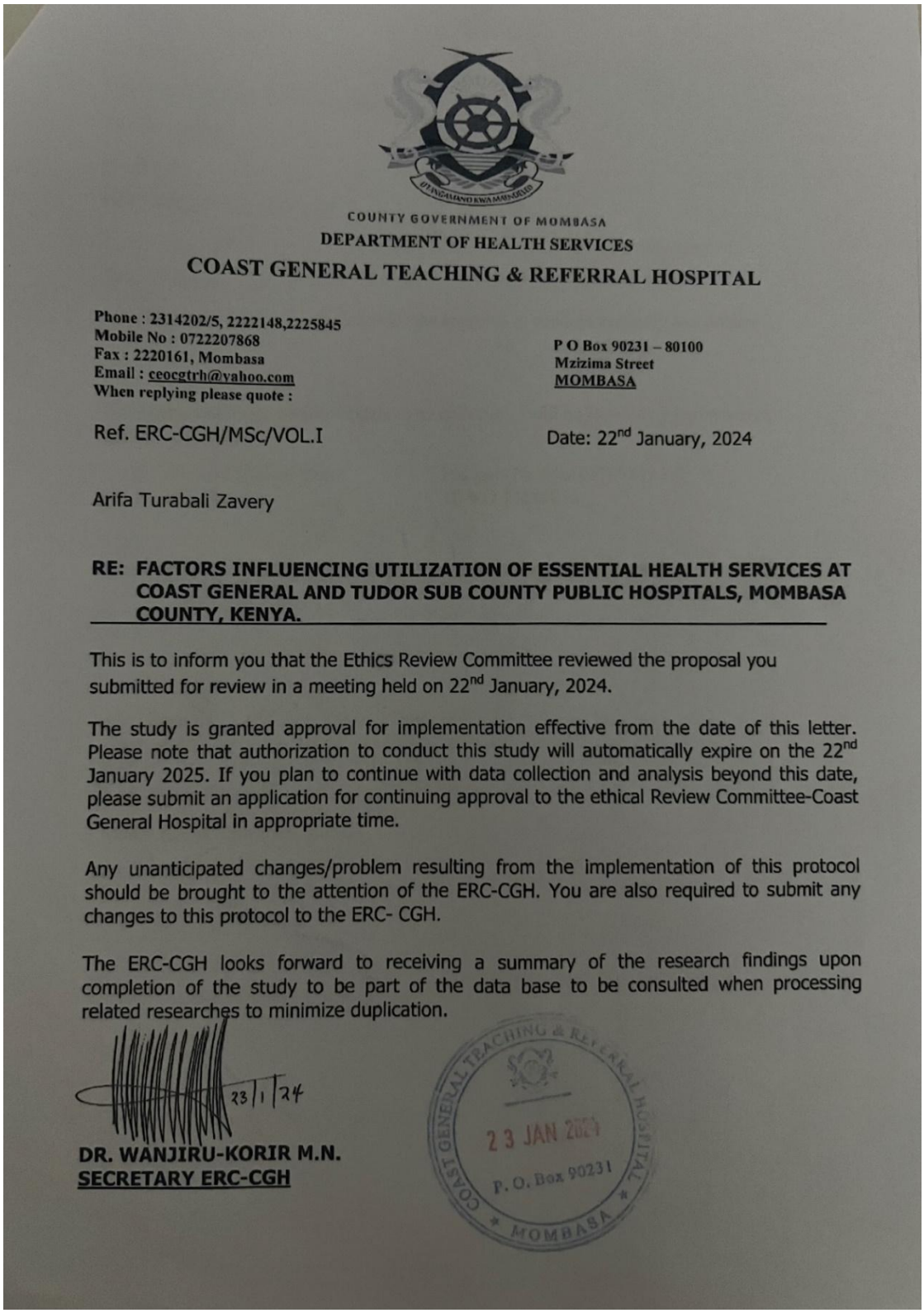
DR. SHEM O. PATTA
COUNTY CHIEF OFFICER, CLINICAL SERVICES
COUNTY GOVERMENT OF MOMBASA.

Copy to:

- County Director -Clinical Services
- Medical Superintendent- Tudor Sub County Hospital

Appendix VIII: Approval Letter – Coast General Referral & Teaching Hospital

REF: ERC-CGH/Msc/VOL.1



COUNTY GOVERNMENT OF MOMBASA

DEPARTMENT OF HEALTH SERVICES

COAST GENERAL TEACHING & REFERRAL HOSPITAL

Phone : 2314202/5, 2222148,2225845
Mobile No : 0722207868
Fax : 2220161, Mombasa
Email : ceocgtrh@yahoo.com
When replying please quote :

P O Box 90231 – 80100
Mzizima Street
MOMBASA

Ref. ERC-CGH/MSc/VOL.I

Date: 22nd January, 2024

Arifa Turabali Zavery

RE: FACTORS INFLUENCING UTILIZATION OF ESSENTIAL HEALTH SERVICES AT COAST GENERAL AND TUDOR SUB COUNTY PUBLIC HOSPITALS, MOMBASA COUNTY, KENYA.

This is to inform you that the Ethics Review Committee reviewed the proposal you submitted for review in a meeting held on 22nd January, 2024.

The study is granted approval for implementation effective from the date of this letter. Please note that authorization to conduct this study will automatically expire on the 22nd January 2025. If you plan to continue with data collection and analysis beyond this date, please submit an application for continuing approval to the ethical Review Committee-Coast General Hospital in appropriate time.

Any unanticipated changes/problem resulting from the implementation of this protocol should be brought to the attention of the ERC-CGH. You are also required to submit any changes to this protocol to the ERC- CGH.

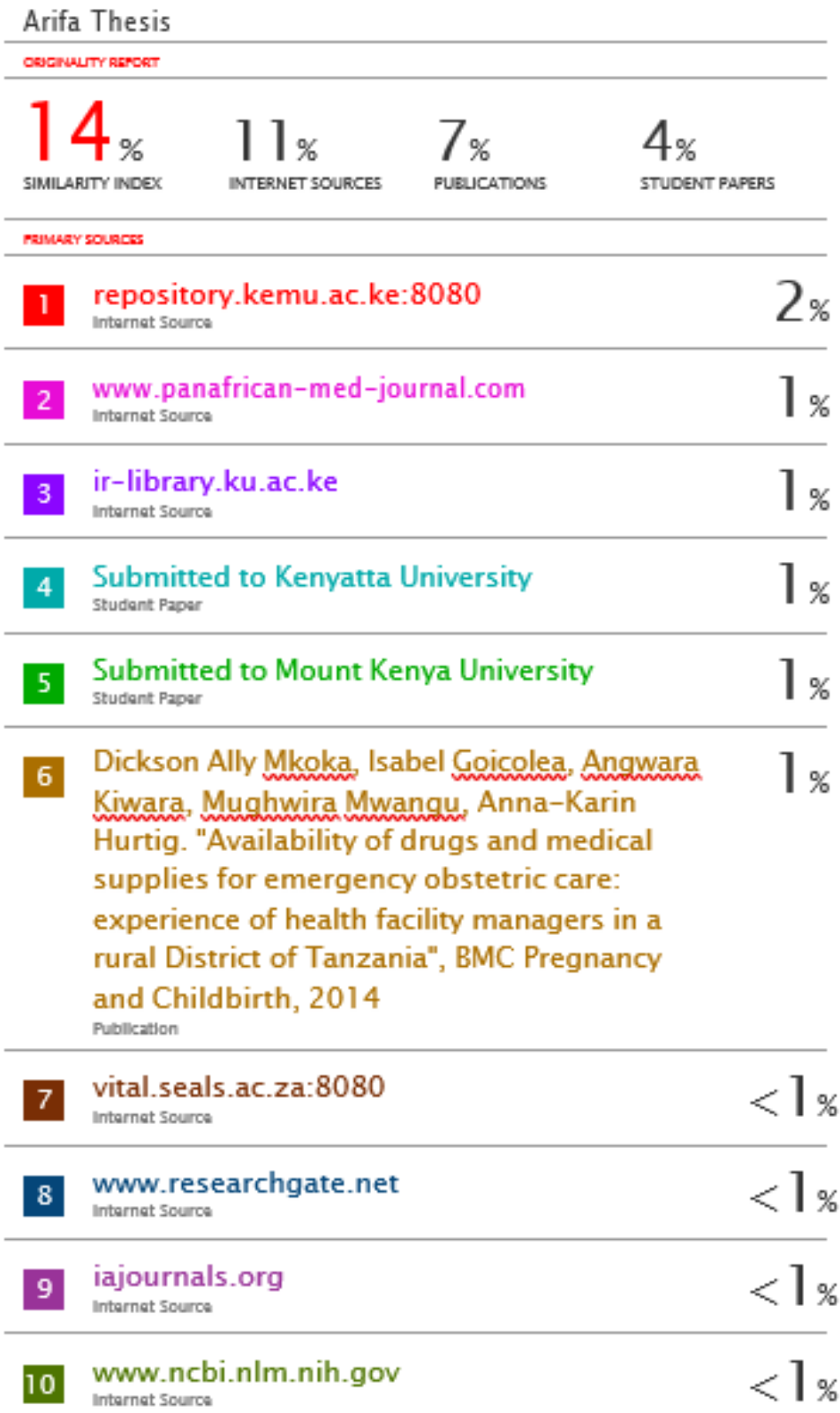
The ERC-CGH looks forward to receiving a summary of the research findings upon completion of the study to be part of the data base to be consulted when processing related researches to minimize duplication.

23/1/24

DR. WANJIRU-KORIR M.N.
SECRETARY ERC-CGH

COAST GENERAL TEACHING & REFERRAL HOSPITAL
23 JAN 2024
P. O. Box 90231
MOMBASA

Appendix IX: Similarity Index



Arifa Thesis

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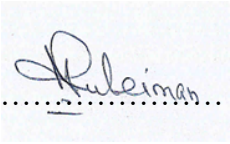
Signature:  Date: 02-Feb-2025

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