EFFECT OF QUALITY IMPROVEMENT APPROACHES ON PREVENTION OF MOTHER TO CHILD TRANSMISSION SERVICES COVERAGE IN NAIROBI COUNTY

BY

DUECE NAKHAYO MALAVA

HSM/74131/2014

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT FOR THE REQUIREMENT OF MASTER OF SCIENCE (MSC) IN HEALTH SYSTEMS MANAGEMENT AT THE SCHOOL OF PUBLIC HEALTH OF UNIVERSITY OF NAIROBI

SEPTEMBER 2021

DECLARATION

This proposal is my original work and has not been presented for a degree in another University.

Signature:  Date: ……01/10/2021……

Name: Duece Nakhayo Malava- HSM/74131/2014

Supervisors

pervisors

Signature: ……. Date: 01/10/2021…….

Dr. Peterson Muriithi,

School of Public Health

University of Nairobi

Signature:  …… Date: …..5/10/2021…….

Dr. Chrisostim Barasa, MBCHB, MBA, MSC HSM

Associate Lecturer

School of Public Health

University of Nairobi

ACKNOWLEDGEMENT

Acknowledgement goes to Dr. Peterson Muriithi, for his direction and coaching towards the development of this project. As an advisor, he was able to provide invaluable guidance throughout the whole process. Acknowledgement also goes to Dr. Chrisostim Barasa, whose insight and guidance was invaluable to the whole process. Appreciation goes to the support and care provided by family members throughout the whole process. Special thanks go to the staff of the University of Nairobi, School of Public Health, for the relationship we had during the development of this project.

ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Ante Natal Care
ARV	Antiretroviral
ASSIST	Applying Science to Strengthen and Improve Systems
AZT	Zidovudine
CD4	Cluster of Differentiation 4
DHIS	District Health Information System
EID	Early Infant Diagnosis
EMTCT	Elimination of Mother to Child Transmission
FGD	Focus Group Discussion
FP	Family Planning
HAART	Highly Active Anti -Retroviral Therapy
HEI	HIV Exposed Infant
HIV	Human Immunodeficiency Virus
IHI	Institute for Healthcare Improvement
KDHS	Kenya Demographic Health Survey
KEPH	Kenya Essential Package of Health
KII	Key Informant Interview
KQM	Kenya Quality Model
KQMH	Kenya Quality Model for Health
KHQIF-	Kenya HIV Quality Improvement Framework
MOH	Ministry of Health

MTCT	Mother to Child Transmission
NASCOP	National AIDS and STI Control Program
NVP	Nevirapine
PDSA	Plan Do Study Act
PEPFAR	U.S President's Emergency Plan for AIDS Relief
PHFS	Partnership for HIV Free Survival
PMTCT	Prevention of Mother to Child Transmission
QI	Quality Improvement
QIT	Quality Improvement Team
TB	Tuberculosis
TQM	Total Quality Management
UNAIDS	United Nations Program on HIV/AIDS
UNGASS	United Nation General Assembly Special Session
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WIT	Work Improvement Team
3TC	Lamivudine

DEFINITION OF TERMS

Change idea: A specific actionable idea that is essential in changing a process

Continuous Quality Improvement (CQI): This involves continuously working to improve results, and the capabilities of everyone involved to bring better results in the future. It focuses on processes and promotes data use to improve processes

Healthcare: Maintenance or improvement of physical and mental health status of outpatients through the provision of a health intervention

Indicator: A characteristic of an individual, population or environment, which is subject to direct or indirect measurement and can be used to describe one or more aspects of the health of an individual or population

Mother to Child Transmission of HIV (MTCT): The primary mode of HIV acquisition in children as transmitted from the mother. MTCT can occur during pregnancy, childbirth, or breastfeeding period

Plan-Do-Study-Act (PDSA) Cycle: A process of developing, implementing, and monitoring change ideas as a way of improving quality. The cycle involves making a plan of what to do, trying the planned actions, observing the results obtained, and acting on the learning points

Prevention of Mother to Child Transmission of HIV (PMTCT): An approach consisting of different interventions geared towards improving the maternal and child health of those living with HIV, as well as reducing mother to child transmission of HIV. These interventions include HIV testing in antenatal care, use of antiretroviral (ARV) prophylaxis and postpartum follow-up of mother-baby pair

QI Project: A set of related activities designed to achieve measurable improvement in processes and outcomes of care. Achievement of Improvements is through interventions that target health care providers, clients, and the community

Quality: The totality of features and characteristics of a product or service that bears its ability to satisfy stated or implied needs

Quality improvement: Systematic and continuous actions that lead to improved health care services and the health status of targeted patient groups

Quality in Healthcare: The degree to which healthcare services offered to the population or individuals increase the likelihood of the desired health outcomes and are consistent with current professional knowledge

Root Cause Analysis: An in-depth examination of a problem to identify the root cause of the problem

5S (sort, set, shine, standardize, and sustain) model: A strategy that focuses on having health care providers work to improve their work environment

LIST OF TABLES

LIST OF FIGURES

TABLE OF CONTENTS

ABSTRACT

Background: Improving the quality of healthcare is a growing international concern as it ensures that the healthcare system functions efficiently. Quality improvement in the HIV field focuses on achieving essential health outcomes, including patient retention, increasing viral load suppression, and improving overall health outcomes of people living with HIV. Quality Improvement (QI) approaches form part of the global strategies recommended by WHO to improve prevention of mother to child transmission (PMTCT) coverage and to achieve virtual elimination of mother to child transmission (MTCT). Nairobi County is implementing QI approaches using the Kenya Quality Model for Health (KQMH) framework. The implementation of QI began in January 2016, and since then, the facilities have formed work improvement teams (WITs) that work to improve the quality in the facilities.

Study objective: This study sought to evaluate the effect of quality improvement approaches on PMTCT coverage in Nairobi County.

Methodology: This quasi-experimental study applied a mixed-method research methodology. Purposive sampling determined the four study facilities. The participants were women attending the PMTCT clinic at the selected facilities, identified through a purposive sampling process. DHIS reports and facility registers provided the necessary quantitative data, while Focus Group Discussions (FGDs) and Key informant interviews (KIIs) provided qualitative data. Quantitative data showing service delivery uptake over time provided a trend on the performance of the key indicators under study. This data analyzed using an interrupted time series approach as well as by using descriptive statistics showed trends over time. Qualitative data assessed clients' experiences while accessing PMTCT services, providing key insights from the clients' perspective. The researcher used content analysis to analyze this data.

Results: The study found out that quality improvement is an integral part of PMTCT service delivery. Through the FGDs, the PMTCT services provided generally satisfy the clients' needs, and that the clients have a significant role in quality improvement. The HCWs can implement QI approaches as long as they have the facility management's support and leadership.

Conclusion and recommendation: The study found out that quality improvement in PMTCT relies heavily on the systems being in place and on teamwork between the HCWs and clients as they access treatment services at the health facilities. The study recommends that the amplification of quality improvement approaches covers other service delivery areas and that the facility management is at the forefront in the implementation and monitoring of the QI approaches.

CHAPTER ONE: INTRODUCTION

1.1: Introduction

This chapter provides the background information of the study, as well as the justification and problem statement. The study objectives, both broad and specific are included in this chapter. The final part of the chapter highlights the study question.

1.2: Background

Quality improvement (QI) is an important concept that aims to improve health system performance and reduce variation in the delivery of care and services (Weston & Roberts, 2013). The overall aim of Quality Improvement in healthcare is to improve health outcomes and improve health system performance. QI involves examining and improving the processes of healthcare, providing information that informs decision-making. Nairobi County implements quality improvement approaches using the Kenya Quality Model for Health (KQMH) framework. KQMH uses evidence-based interventions to improve quality.

Nairobi County has been implementing prevention of mother to child transmission of HIV (PMTCT) since 2000, with a scale-up of services occurring over the years. As part of the WHO PMTCT strategic vision 2010 – 2015, improving the quality and delivery of PMTCT services is a crucial step in addressing the gaps identified in PMTCT (WHO (Geneva), 2010). Through the support of the National AIDS and STI Control Program (NASCOP) and various implementing partners, health care facilities began implementation of quality improvement approaches. Within the health facilities, implementation of QI occurs across the different departments, including PMTCT, to improve the quality and delivery of services.

Kenya launched the Kenya Quality Model for Health (KQMH) in 2012. This incorporates evidence-based medicine with Total Quality Management (TQM) and patient partnerships (USAID ASSIST, 2015). The Kenya HIV Quality Improvement Framework (KHQIF) evolved in 2014 as an adaptation of the KQMH. This document provided the needed guidance for implementing quality improvement approaches specifically for HIV services including PMTCT (MOH, 2014). Nairobi County embarked on improving the quality of PMTCT services using the KQHIF model since January 2016. The process began with buy-in from the County and Sub County teams before cascading down to the health facilities. In the beginning, the County teams, Sub-county teams, as well as facility-level teams received sensitization on KQMH, which paved way for the identification of QI champions at each level. The facilities then set up Quality Improvement teams (QITs) and Work Improvement Teams (WITs) whose mandate was to identify areas of improvement within the different service delivery areas.

The QI strategy used involved forming quality improvement teams (QITs) and Work improvement teams (WITs) within the facilities. QITs are responsible for the overall quality of the facilities and work to ensure there is coordination and implementation of QI activities within the facilities. They are composed of the Health Facility Management Team and middle management, as well as heads of departments. WITs are specific to departments in which the staff work and its members are drawn from the service areas and support departments. Each team is composed of between 3 to 15 members of staff. The teams meet once or twice a month and work to identify gaps in service delivery. Upon identification, the teams conduct a root cause analysis to come up with change ideas to address those gaps. The WITs use the Plan-Do-Study-Act (PDSA) cycle and 5S (sort, set,

shine, standardize, and sustain) to implement quality improvement approaches in their service delivery areas.

1.3: Problem statement

In HIV services, QI is guided by the Kenya HIV Quality Improvement Framework (KHQIF), which tracks different indicators along the HIV cascade ("NASCOP HIV QI," 2018). The QI in PMTCT is particularly crucial because WHO recommends it as part of its strategic plan (2010-2015), which seeks to improve the uptake and coverage of PMTCT (WHO (Geneva), 2010).

Up to 90% of all new HIV infection in children results from mother to child transmission. The efficiency of Prevention of Mother to Child Transmission (PMTCT) services in Kenya is aimed at achieving virtual elimination of mother to child transmission of HIV. PMTCT efforts in Kenya have increased over the years with some reasonable achievements in uptake and coverage (NASCOP and NACC, 2016).

To maximize PMTCT interventions, the mother-baby pairs must stay together on follow up until 24 months postpartum. This is when the child's final HIV status can be determined, and the mother-baby pairs exited from the PMTCT program (NASCOP, 2012). Having integrated services for the mother-baby pair and ensuring services are offered as a one-stop-shop in the PMTCT clinic fosters retention to care. Integration of services improves the cost-effectiveness of services to the mothers and allows the healthcare providers to provide services in a structured way. This improves the quality of services delivered (Mutanda et al., 2017).

Through the help of NASCOP and various implementing partners, implementation of QI approaches in Nairobi County began with buy-in from the County and Sub-County teams before cascading down to the health facilities. In PMTCT, QI seeks to improve coverage and service delivery in line with the stipulated guidelines. At the onset of the study, it was unclear whether QI approaches have affected the provision of PMTCT services in Nairobi County. This study, therefore, sought to establish the effect of this approach to PMTCT service delivery. As a measure of quality, this study focused on PMTCT indicators namely uptake of HIV testing services and ART initiation among HIV positive pregnant and breastfeeding women. Additionally, it focused on the uptake of early infant diagnosis (EID) for HIV Exposed Infants (HEIs) as well as retention of mother-baby pairs up to 24 months (completion of PMTCT).

1.4: Justification

The provision of quality healthcare services is a fundamental right to health. The adaptation of quality improvement approaches works to improve the quality of healthcare. Using the Kenya Quality Model for Health, Kenya implemented this quality improvement approach as a way of improving service delivery and overall patient care (Mutanda et al., 2017).

For any PMTCT program to be effective, both mother and child, as well as their families, need to have access to quality PMTCT interventions (Padian et al., 2011). All parties involved in healthcare provision need to have a collective effort to ensure that quality services reach the intended recipients. Thus, quality improvement in PMTCT is a collective agenda for all parties involved.

Though Nairobi County has been implementing QI approaches, its effect on PMTCT service delivery or overall patient care is not clear. This study intended to determine what effect quality improvement has had on the coverage and delivery of PMTCT services. The lessons derived from the study were to be used to inform the ministry of health on the use of quality improvement approaches in the provision of PMTCT services.

It would also be useful to the management of health facilities because it provided an insight into what factors either hinder or facilitate the implementation of quality improvement approaches. The feedback received during the FGDs helped health facilities identify areas of improvement in the provision of PMTCT services.

1.5: Study Objectives

1.5.1: Broad Objective

To evaluate the effect of quality improvement approaches on Prevention of Mother to Child Transmission coverage in Nairobi County

1.5.2: Specific Objectives

i. To identify the factors influencing the implementation of quality improvement approaches
ii. To determine the influence of quality improvement on the uptake of Prevention of Mother To Child Transmission of HIV services
iii. To determine the influence of quality improvement approaches on retention to care of the mother-baby pair at 18 months postpartum

1.6: Research Questions

Nairobi County has implemented QI in its different facilities to improve the quality of care and overall patient outcomes. This study sought to establish the effect that the implementation of QI approaches has had on the PMTCT coverage in selected health facilities within the county. In light of this, the study sought to answer the question:

- Has the implementation of QI approaches influenced the performance of PMTCT services?

CHAPTER TWO: LITERATURE REVIEW

2.1: Introduction

This chapter provides the literature review for the study. Literature review was done through Google Scholar, and utilized publication houses such as Pub Med, Plos One and National Center for Biotechnology Information (NCBI) as well as the UoN repository. The chapter begins with a description of Quality Improvement Concept, and zeroes down to Quality Improvement in Healthcare, and PMTCT giving examples on where this has been applied. The chapter then focuses on implementation of QI in Kenya, highlighting the adaptation of the Kenya HIV Quality Improvement Framework (KHQIF) on improving quality of HIV care. The chapter concludes with a conceptual framework as derived from Total Quality Management (TQM).

2.2: Quality Improvement Concept

Quality has been defined as "*the totality of features and characteristics of a product or service that bears its ability to satisfy stated or implied needs*" ISO 8402-1986. The American Society of quality defines it as "*The characteristics of a product or service that bear on its ability to satisfy stated or implied need. Quality can also be a product or service free of deficiencies*". According to the Classical theory in quality management and improvement, the key principles of quality are customer focus, continuous improvement, process orientation, teamwork, and decisions based on facts (Schroeder et al., 2009).

Generally, the act of "doing better" is what is considered as an improvement (Batalden and Davidoff, 2007). Quality Improvement (QI) involves doing systematic and continuous actions that lead to improved health care services and the health status of targeted patient groups (Health

Resources and Services Administration, 2011). Quality improvement (QI) in healthcare consists of varied models and methods, which aim to improve healthcare, to make healthcare more effective and efficient and to increase safety index for the patients (Donabedian, 2002). QI seeks to improve health system performance.

The Institute of Medicine defines quality in healthcare as the "*degree to which healthcare services offered to the population or individuals increase the likelihood of the desired health outcomes and are consistent with current professional knowledge"* (IOM, 2018). It further says that six domains provide the criteria by which to judge healthcare quality. These domains are effective, safe, equitable, efficient, timely, and patient-centered. According to Gupta and Rokade (2016), patient satisfaction is a critical feature of quality healthcare. Healthcare quality is essential because it is indicative of the functioning of the health system.

2.3: Quality Improvement in Healthcare

A growing international concern of the health sector is on ensuring that there is an improvement in the efficiency in service delivery. According to the World Health Organization (WHO), inefficiency accounts for wastage of 20%-40% of resources spent on health (World Health Organization, 2007). While scaling up of essential health coverage at a global scale requires more resources, improvements in health could be made with available resources if countries worked to improve their healthcare systems efficiency (World Health Organization, 2007).

Improving the healthcare system is crucial because it increases the chances of patients achieving the expected outcomes and benefits of care. Quality Improvement use in other service delivery

areas of healthcare show successful implementation. Studies show how QI was used to improve child health services (Bradley and Igras, 2005), maternity services (Kayongo et al., 2006) as well as in improving the cost of healthcare service delivery (Wouters, 1995). Quality Improvement is also important in combating the HIV/AIDS pandemic, as well as in meeting the goals of the National HIV/AIDS Strategy. With the implementation of QI approaches, indicators like HIV care, linkage, and retention can be improved (MOH, 2014). Quality Improvement within the HIV field focuses on achieving crucial health outcomes that include overall retention in care, increasing viral load suppression, and improving the general health outlook of HIV positive individuals (MOH, 2014).

2.4: Quality Improvement in Prevention of Mother To Child Transmission

The objective of QI in PMTCT is to improve the services delivered to PMTCT clients, which would ideally lead to efficient services, customer satisfaction, and improved outcomes. Achieving virtual elimination of transmission of HIV from mother to child is the goal of PMTCT services in Kenya. Quality improvement is required in all the four prongs of PMTCT and needs dedicated teams to implement the approaches.

Globally, mother to child transmission (MTCT) is the primary mode of HIV acquisition in children. The MTCT can occur during pregnancy, childbirth, or breastfeeding period (WHO (Geneva), 2010). Before the development of effective interventions to reduce MTCT of HIV, the estimated transmission rates were 25%–40% among women who are breastfeeding in resource-limited countries and 15%–25% among women who are not breastfeeding in North America and Europe (Cock et al., 2000).

In 2017, 1.5 million people were living with HIV in Kenya. The percentage of women living with HIV was higher than that of men at 5.2% and 4.5% respectively. The rate of new infections among people aged 15-49 has reduced from 0.35% in 2010 to 0.19% in 2017 with a prevalence rate of 4.85% (NASCOP and NACC, 2018). This group represents the reproductive age group in which PMTCT would be most critical. The coverage for PMTCT services has increased from 23% in 2005 to 76% in 2017 while the MTCT rate reduced over the same period from 29.7% in 2005 to 11.7% in 2017 (NASCOP and NACC, 2018).

A four-prong strategy is required to make PMTCT more effective. The first prong focuses on preventing HIV infection among potential parents by ensuring HIV testing and other prevention interventions are available to them. Ensuring that HIV positive women avoid unwanted pregnancies by providing appropriate counselling on contraception forms the second prong. The third prong advocates for the use of antiretroviral therapy for all HIV positive pregnant and breastfeeding women to prevent HIV transmission. The fourth prong focuses on providing appropriate care, support, and treatment to mothers living with HIV and their children and families (NASCOP, 2012).

Implementation of QI in PMTCT has shown success in improving PMTCT in several areas of implementation. Studies show how QI processes have improved the different aspects of the PMTCT program. A research study done in South Africa shows how QI approaches improved PMTCT outcomes, which led to a dramatic fall in the MTCT rates. This study implemented in 2005 in 18 study sites had PMTCT demonstration projects established to improve performance.

The quality improvement teams from these sites met regularly to discuss the principles of QI as well as get new approaches to implement PMTCT. They also got to learn from each other's experiences in the implementation of QI and used data to inform the strategies used in QI. The study occurred in three phases, which were: the demonstration phase, the test of scale-up phase, and the national scale-up phase. During the national scale-up phase, the study results guided the scale-up of the intervention to other areas of the country (Barker et al., 2015).

Kwale County, through the USAID Applying Science to Strengthen and Improve Systems (ASSIST) project, implemented QI approaches in PMTCT in 16 facilities. The study done in 2013 had two implementation phases. Phase 1 focused on identifying the causes of poor quality PMTCT while phase 2 built on the learning lessons and change ideas from phase 1. In the beginning, the County teams, Sub-county teams, as well as facility-level received sensitization on KQMH. The facilities formed WITs comprising of 8-13 members. These teams began looking at their performance data to identify the gaps in PMTCT care, conducting root cause analysis to understand the gaps identified. The teams then developed change ideas to address these gaps. Trained coaches guided the facility teams on QI. With this approach, the facilities were able to note sustained improvements in the care provided to PMTCT mothers. The results from this study provided recommendations on scaling up implementation in Kakamega, Busia, Uasin Gishu, and Turkana Counties (Mutanda et al., 2017).

A study done in Kwa Zulu Natal showed how the use of QI approaches could improve the quality of data that monitors the PMTCT program. The data collected in PMTCT monitors program indicators as well as informs decision making about the program. Implementing QI allows one to

look at the collected data, allowing them to identify gaps and get solutions to these gaps. Implementing QI can improve the completeness and accuracy of the data collected, leading to better decision making (Mphatswe et al., 2012).

A systems approach towards QI can also improve the PMTCT program. Using a systems approach entails looking at the functions of the different parts of the system. It also looks at the interrelation between these parts. A study done in South Africa shows how the systems approach to QI strengthened the PMTCT program. A collaborative effort, changes in protocol, an additional allocation of funds, and a system redesign provided the needed changes in the PMTCT program. Buy-in from the leadership and reliable data source were equally crucial for successful implementation (Youngleson et al., 2010).

Quality improvement requires commitment and dedication from all involved. Health care workers require adequate knowledge on how to implement QI, and they need support from the facility management. QI requires reliable data management as the implementation of QI cannot occur without continuously monitoring performance.

2.5: Quality Improvement in Kenya

The Kenya Quality Model for Health (KQMH) is a conceptual framework intended to provide an integrated approach to improve the quality of healthcare. KQMH is the revised version of the Kenya Quality Model (KQM), introduced in 2001 and piloted in 2003. The need to align the model to the newly introduced Kenya Essential Package of Care (KEPH) levels of care led to the revision of KQM. Launched in 2012, KQMH incorporates evidence-based medicine with total quality

management (TQM) and patient partnerships (USAID ASSIST, 2015). The main aim of KQMH is to improve adherence to standards and guidelines that are evidence-based, as well as apply quality principles and tools to improve structure, process, and outcomes. It also aims to ensure client satisfaction in a culturally acceptable way. Implementation of KQMH is the first step towards ISO certification.

The first step in the implementation of KQMH begins with involving top leadership to get buy-in for the process. Involving senior management is crucial, as their leadership is required to implement quality improvement approaches. The implementation of KQMH has had various challenges. According to a study done in Kiambu County, these challenges range from inadequate funding, lack of communication within the facility, a limited number of health care workers who are qualified to implement KQMH, and a lack of sense of responsibility of the employees at the facility (Murungami, 2014). Successful implementation would be dependent on the identification of strategies to mitigate these challenges.

Developed in 2014 and adopted from KQMH, the Kenya HIV Quality Improvement Framework (KHQIF) is a framework meant to guide the implementation of HIV quality improvement ("NASCOP HIV QI," 2018). The main goal of KHQIF is to ensure that there is the provision of quality HIV services, to improve patient and HIV program outcomes, to improve the standard of living among people living with HIV, to prevent new HIV infections, and to reduce MTCT in Kenya. Implementation of KHQIF is through the Plan-Do-Study-Act (PDSA) and 5S (sort, set, shine, standardize, and sustain) models, which form the backbone for the Total Quality

Management (TQM). The TQM model has proven to be ideal for continuous improvement activities for services that involve patients with chronic conditions (MOH, 2014).

The success of KHQIF implementation relies on measuring performance at every level. Performance measurement involves the development of set indicators, collecting data on these indicators using appropriate tools, and analyzing this information to determine the performance (MOH, 2014). In PMTCT, these indicators focus on retention of mother-baby pairs in care, uptake of essential PMTCT services like HIV testing and ART initiation as well as viral suppression.

2.6: Conceptual Framework

Implementation of quality improvement approaches requires the use of scientific knowledge to guide change. One way of implementing QI is by using Total Quality Management (TQM). TQM is a quality improvement approach that focuses on providing customer satisfaction (Hashmi, 2013). The critical aspect of quality healthcare is customer care (Gupta and Rokade, 2016). In TQM, maintenance of customer satisfaction is by ensuring that the functions, culture, and services of an organization are all integrated (Wamuyu, 2015). Customer feedback and input provides a critical piece in ensuring that services meet their needs. An organization achieves TQM by continuously ensuring that all members actively participate in improving the processes in their areas of work. TQM focuses on continuous quality improvement, intending to improve results, and improving the capabilities that will produce better results in the future.

In Kenya, KHQIF enshrines the TQM principles as adapted from KQMH (MOH, 2014). Under KHQIF, TQM has six principles (inputs), which are a systems approach to management,

leadership, process orientation, knowledge on and implementation of PDSA cycle (CQI), data-driven (evidence-based) decision making, and customer orientation and engagement. These inputs guide the QI approaches (process) to provide quality services (output). An organization can have all six principles in place without taking into consideration the QI process, and this would harm the provision of quality services.

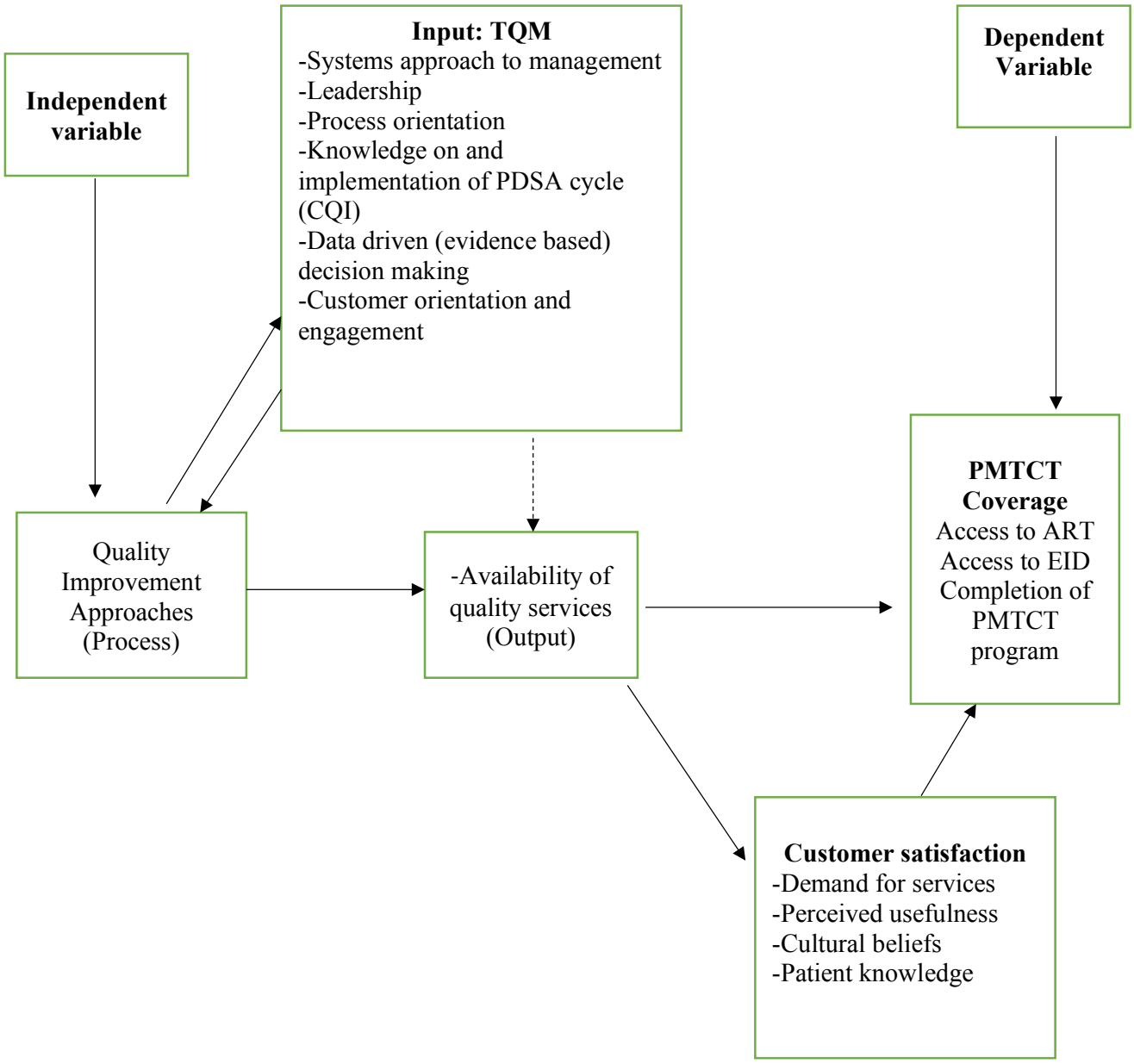

Figure 1: Conceptual framework of study (Adapted from TQM based on the KHQIF model)

CHAPTER THREE: METHODOLOGY

3.1: Introduction

This chapter provides a description of the methodology used to conduct the study. The section provides a description of the study design, study area, study sites and study participants, sampling procedures, study assumption and ethical considerations.

3.2: Study Design

The study was a quasi-experimental study design. The researcher chose this design because the study sought to describe the existence of a causal relationship between the research variables rather than confine it to data collection only. It sought to get a view of the situation before the initiation of PMTCT QI approaches in the selected facilities by comparing the performance of PMTCT quality indicators for the period before implementation of QI approaches with the performance after QI implementation to determine effect.

A mixed-method research design determined the effect of QI on PMTCT coverage. This design offered a chance to the consumers of the PMTCT services to provide their views. The clients' experiences complemented the study results and served to strengthen the study's conclusion. Focus Group Discussions and Key Informant Interviews that allowed the study participants to share their experiences openly provided the qualitative data for the study. A review of the secondary data in the form of registers and facility reports from the selected facilities provided the quantitative data. This provided information on the status of services before and after the implementation of QI approaches in PMTCT service delivery, and helped to cement the findings from the qualitative data. The data extracted from the registers and facility reports included data on PMTCT indicators

namely HIV testing rates, ART uptake among pregnant and breastfeeding women, as well as the retention rates among the mother-baby pair. The extracted data helped in determining trends over time and provided clarity on the performance of the PMTCT indicators under study.

3.3: Study Area

Nairobi County is the capital city of Kenya, covering an area of 696 square kilometers. Nairobi County lies at an altitude of 1,798 meters above sea level, and it borders Kiambu County to the North and West, Kajiado to the South, and Machakos County to the East. There are ten sub-counties in Nairobi County, which are Embakasi East, Embakasi West, Dagoretti, Kamukunji, Langatta, Kasarani, Ruaraka, Makadara, Starehe, and Westlands Sub-counties. According to the Kenya National Bureau of Statistics projections in 2019, the population of Nairobi County is 4,397,073, out of which 49% are males while 51% are females. Children make up 34% of the total population (KNBS, 2019).

Nairobi County has approximately 968 health facilities, out of which 139 are public health facilities, 108 are Non-Governmental Organizations owned facilities, 103 are faith-based, and 618 are privately owned health facilities (MOH, 2019). These facilities receive pharmaceutical and non-pharmaceutical supplies from KEMSA. The facilities hold regular meetings within themselves and with the sub-county teams to determine progress and address any identified gaps.

With an HIV prevalence rate of 6.1%, Nairobi County is contributing to 11.3% of the cumulative number of people living with HIV in Kenya. The prevalence of HIV in men is lower at 4.7% than that of women at 7.5%. In 2018, the county contributed to 4% of new infections in children and

7% of new infections in adults in Kenya. Nairobi County has had significant interventions to help reduce transmission of HIV from mother to child, including rolling out of Option B+, Beyond Zero, and Bring Back the Mothers Campaign. Through these interventions, coverage of PMTCT increased to 97%, while MTCT rates stood at 3.7% in 2015 (NASCOP & NACC, 2018). The researcher chose Nairobi County for the study because the implementation of quality improvement approaches particularly in PMTCT services had not been evaluated before.

3.4: Study Sites

The sites targeted for the study were Mama Lucy Kibaki Hospital, Mbagathi Hospital, Westlands Health Center, and Kangemi Health Center. The researcher chose these facilities because they are high CCC patient volume sites in Nairobi County. High volume facilities represent those facilities that have more than 1000 clients enrolled in the CCC, which in turn provided the capacity to handle PMTCT clients. Another selection criterion was that the facilities chosen provided integrated ANC and PMTCT services in the MCH clinic for eligible clients and were able to provide follow up until discharge from the PMTCT program. These MCH clinics receive more than 50 ANC clients per day and have the capacity to handle PMTCT clients. To qualify for the study, PMTCT should have been operational for more than six months before the implementation of the QI strategy. As a policy, these facilities should have a functional QIT that oversees the implementation of QI projects in PMTCT. Thus, having a QIT/WIT that was actively undertaking QI projects in PMTCT qualified a site for the study.

These facilities have facility in-charges who provide overall facility management. Within each site, there are different departments, which include the maternal and child health (MCH) clinics

where PMTCT clients receive services. Departmental heads, who are mainly qualified nurses, lead the various departments in the health facilities while the QIT/WIT team leaders head the QIT/WITs in their facilities. The QIT/WIT leads have received training on QI implementation and provided overall leadership for QI implementation in their teams.

These facilities have qualified health care workers working in the MCH clinics who undergo regular refresher training and on the job training to improve their knowledge and capacity in the management of PMTCT clients. They produce monthly reports showing the performance of the different PMTCT indicators and use these reports to guide decision making during service delivery. Each site has a customer desk and a suggestion box to allow clients to provide feedback on the services received.

3.5: Study Participants

The members of the FGDs came from women seeking PMTCT services at the selected facilities, which included women making initial and follow-up ANC visits, as well as mother-infant pairs on follow-up. Recruitment of the FGD participants occurred as they came for their regular clinic appointments and depended on their willingness to participate. Departmental heads, as well as PMTCT WIT team leaders, formed the target group for the key informant interviews, as their insight was crucial to the study.

3.5.1: Inclusion Criteria

The facilities included in the study were high volume facilities with more than 1000 clients in the CCC. They also have integrated PMTCT in the MCH clinic that caters to 50 clients or more daily. They also had a functional WIT actively undertaking QI projects.

Those recruited to participate in the FGDs were clients seeking PMTCT services in the facilities at the time of the study. These clients had come to the facility more than once and were present when the QI interventions took place. To take part in the KIIs, one had to be a team leader of the PMTCT WITs or head of department in the MCH in each facility. They also needed to be conversant with the QI projects undertaken by their teams.

3.5.2: Exclusion Criteria

Lack of a functional QIT/WIT excluded a site from the study. The study also excluded privately managed facilities as well as those that have not integrated PMTCT services in the MCH clinic. Additionally, those facilities with a QIT/WIT but not having an active QI project at the time of study did not participate.

Clients who came to the facility to access other services, including the very sick clients, did not participate in the FGDs. The study excluded the clients on transit and those who had not been enrolled in the PMTCT clinics at the facilities. Other members of the PMTCT WIT or other departmental WIT leaders did not take part in the KIIs.

3.6: Assumptions For Study Participants

The study made several assumptions. The first assumption was that the population served in the selected facilities was homogenous. A Homogenous population refers to one, which has the same characteristics and corresponds in structure because of a common origin. The study also assumed that there was control over the moderating variables, which means there was no influence over the dependent and independent variables. The third assumption made was that there were no significant policy changes implemented during the period of interest that would have otherwise affected the outcomes of PMTCT.

3.7: Sample Size

The study selected four high volume health facilities in Nairobi County using the criteria mentioned above. Each facility had one working group team. In each facility, the study targeted departmental heads/facility head, QIT/WIT team leaders, and PMTCT clients. Clients accessing PMTCT services in each facility had one FGD. Key Informant Interviews targeted the QIT/WIT team leaders and MCH departmental heads. In total, the researcher conducted four FGD and four KIIs.

Table 1: Sample size distribution

Target group	Sample size
FGD teams (made up of 10 members)	4 groups
WIT team leaders or Departmental head	4

3.8: Sampling Technique

The four study facilities were purposely selected using the criteria mentioned above. Those not meeting the selection criteria were not part of the study. The participants who took part in the focus

group discussion were also selected using the purposive sampling technique. The selection of participants, in this case, targeted those clients who were accessing PMTCT services at the time of study and were willing to take part in the FGD. To identify the specific clinic days with a high client load, the researcher used the appointment management system available in the selected PMTCT clinics. Once identified, the researcher enrolled the participants to the FGD as the clients accessed services depending on their willingness to participate. The QIT/WIT team leaders or departmental heads (MCH) took part in the KIIs because their insight was very crucial to the study.

3.9: Other Study Procedures

All the participants who took part in the study received detailed information about the research before providing informed consent for participation. During the consenting process, the researcher went through the consent form with the study participants, explaining crucial details in the consent form. Once finished, the researcher allowed the participants to seek clarification before proceeding to sign the consent forms. No participant took part in the study before signing the consent forms.

3.10: Study Variables

The following were the study variables investigated in the study under each objective, derived from the conceptual framework.

Table 2: Study Variables

Objective	**Variable**	**Definition of variables**	**Data Source**
Objective1: To identify the factors influencing the implementation of quality improvement approaches	PMTCT service delivery factors	Intermediate variable	FGDs from PMTCT clients Interviewer guided KIIs

Objective 2: To determine the influence of quality improvement on the uptake of PMTCT services	Monitoring and evaluation of PMTCT indicators	Intermediate variable	Facility PMTCT registers Facility records
Objective 3: To determine the influence of quality improvement approaches on retention to care	Client retention in PMTCT program	Intermediate variable	Facility PMTCT registers Facility records Client feedback (FGDs)

3.11: Ethical Considerations

The Kenyatta National Hospital- University of Nairobi (KNH-UoN) Ethics Committee granted the authority to conduct the study. The local Sub County Medical Officer of Health (SCMOH), and the facility in-charges, were also informed and their consent sought. The researcher sought informed consent from the respondents after explaining the purpose and importance of the study. The researcher briefed the participants in the FGDs on the intention to use a voice recorder during the discussions, allowing them to choose participation. For the maintenance of confidentiality, the study did not record any participants' names or identification features.

3.12: Recruitment Of Research Assistants

The researcher recruited two research assistants for the study through an interview process conducted by the researcher. Selection of the research assistants depended on their training in health-related sciences as well as research methodology, and on their experience in conducting focus group discussions and key informants interviews using a questionnaire. Both research assistants had training in clinical medicine, with additional qualifications in research methods. The

researcher trained the research assistants on the data collection process and tools before commencing data collection.

3.13: Data Collection

The study collected both primary and secondary data reported from the facility. FGDs and Key Informants Interviews provided the primary data. The focused group discussions carried out in all the four facilities targeted eight to ten participants. The FGDs sought to understand the clients' perspective when it came to quality and helped determine the level of satisfaction in the services provided. Key informant interviews were done with QIT/WIT team leaders or MCH departmental heads, allowing them to get their views on the QI process. The researcher developed an Interview Guide for the Key Informant Interviews and a Focused Group Discussion guide for the FGDs to collect data. A digital voice recorder recorded the discussions during FGDs to supplement the notes recorded by the moderator during the group discussions. All the participants consented to the use of a digital voice recorder to record the sessions.

A review of facility registers and DHIS reports provided the needed secondary data. The data collected from the facility registers and DHIS included data on HIV testing rates, ART uptake among pregnant and breastfeeding women, as well as the retention rates among the mother-baby pair. The data collection focused on the period before implementation of quality improvement (October 2014 to September 2015) and the period after quality improvement (October 2018 to July 2019). The collected data helped in determining trends over time, which was crucial to make inferences in the study.

3.14: Data Management And Analysis

The data sets collected from the register reviews and DHIS reporting were edited, cleaned, and tabulated, with data entered into a statistical software, namely Statistical Package for Social Sciences Program (SPSS) for analysis. Data cleaning eliminated any errors within the data sets and allowed the researcher to make conclusions from the data. Transcription of the data collected by the voice recorder used during the FGDs produced a written text. The researcher analyzed this text alongside field notes documented by the moderator of the discussion. The information collected using the KIIs underwent cleaning and coding to draw conclusions from it. All the data collected were stored in well-labeled and dated files with separate folders for each data set for easy access. Electronic data storage in computers secured by passwords avoided unauthorized access to the data sets. Data backup occurred electronically.

3.14.1: Quantitative Data Analysis

An interrupted time-series design that compared performance before and after QI approaches provided the approach to data analysis. The researcher used descriptive statistics which included frequencies and percentages to analyze quantitative data and presented this in the form of line and bar graphs, as well as pie charts. Graphical presentation of data showed the trends in the PMTCT cascade, mainly looking at HIV testing trends, ART initiation among identified positives, early infant diagnosis, and retention rates among the mother-baby pair. Chi-square (χ^2) inferential statistical technique further analyzed this data to determine any association between the independent and dependent variables. The independent variable defined the use of quality improvement approaches, while the dependent variable defined coverage and utilization of PMTCT services.

3.14.2: Qualitative Data Analysis

The researcher used content analysis to analyze qualitative data. Analysis of FGD data involved going through both the field notes and recorded sessions to get transcribed text. The researcher went through this text to identify key categories of words or phrases that address the areas of interest. This allowed the researcher to code the information along with the recurring themes on the clients' feedback. The researcher then transcribed the data collected by the KII guides and reviewed this text to pick out any recurring themes, which underwent coding. KIIs provided the healthcare workers' perspective on quality improvement.

CHAPTER FOUR: STUDY RESULTS

4.1: Introduction

This chapter describes the study findings as obtained from the study participants and review of secondary data. Data collection occurred in the period between June and July 2019. The presentation of the results is in line with the study objectives.

4.2: Study Flow

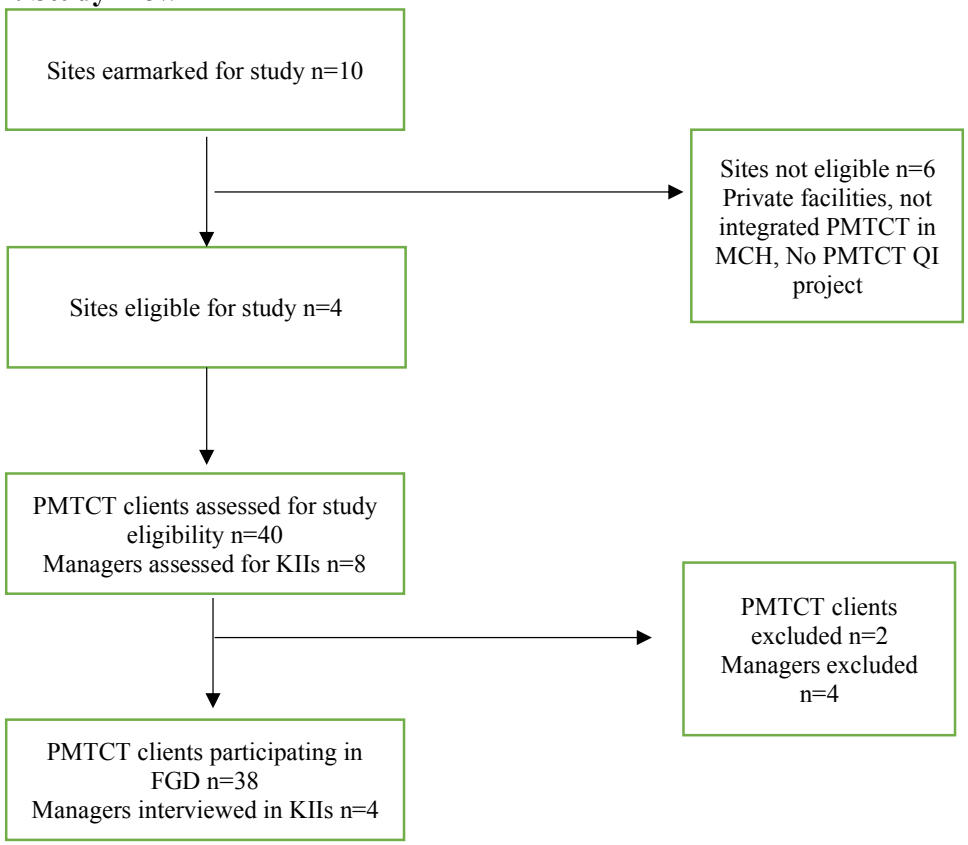

Figure 2: Study Flow

4.3: Socio-Demographic Data of Study Participants

4.3.1: Focus Group Discussion Study Participants

The table below shows the age brackets of the study participants of the FGDs. The results show that majority of the study participants (71%) were in the age bracket 25-49 years, while the rest (29%) were in the 18-24 age bracket. These results show that the clients seeking PMTCT services fall within the reproductive age group in which PMTCT would be most critical.

Table 3: Sociodemographic data of study participants

Health Facility	Total FGD participants	18-24 years	25-49 years
Mama Lucy	10	3	7
Mbagathi	8	0	8
Kangemi	10	6	4
Westlands	10	2	8
	38	**11 (29%)**	**27 (71%)**

4.3.2: Key Informants Interview Study Participants

This information comprises the cadres of staff, work experience, qualification, and level of involvement in work improvement teams. As shown from the table, the least work experience by the staff members was below two years, with the highest being five years. The highest qualification was a Master degree level while the lowest was a diploma level.

In one of the study facilities, where the in-charge had a Master level, other cadres of staff had more involvement in implementing Quality Improvement approaches mainly because the in-charge was involved actively in other duties, thereby shifting this task to other members of staff.

Table 4: Sociodemographic data of KII study participants

Position	No of years worked at the facility	Qualifications	Level of involvement in the work improvement team
PMTCT clinician	3-5	Diploma	High
MCH In charge	3-5	Masters	Moderate
PMTCT nurse	Below 2 years	Diploma	High
PMTCT clinician	Below 2 years	Diploma	High

4.4: Factors Influencing the Implementation of Quality Improvement approaches

The key highlights on the views of the facility managers on quality improvement came about during the KIIs. All the facilities under study had both Quality Improvement Teams (QITs) to undertake overall quality improvement for the facilities and Work Improvement Teams (WITs) in the PMTCT clinic to cater to quality improvement. The standard package of care offered in the facilities included ART, prophylaxis for the infant, partner and family testing services, as well as adherence counselling. Other services included STI screening and management, post-abortion care, focused antenatal care, treatment monitoring, nutritional counselling, as well as referrals for additional support as needed. This is in line with the four-pronged approach to PMTCT as recommended by WHO.

Several factors influenced the implementation of quality improvement interventions. These included the identified gaps in service delivery, staff shortage, and heavy workload, which limits the ability to conduct meetings, lack of co-operation between the teams (staff and clients) affecting teamwork and client involvement in QI. Other factors influencing QI were the presence of support from facility management and the availability of data to identify performance gaps as well as

monitor performance against targets. The KIIs identified several challenges affecting quality PMTCT service provision as follows:

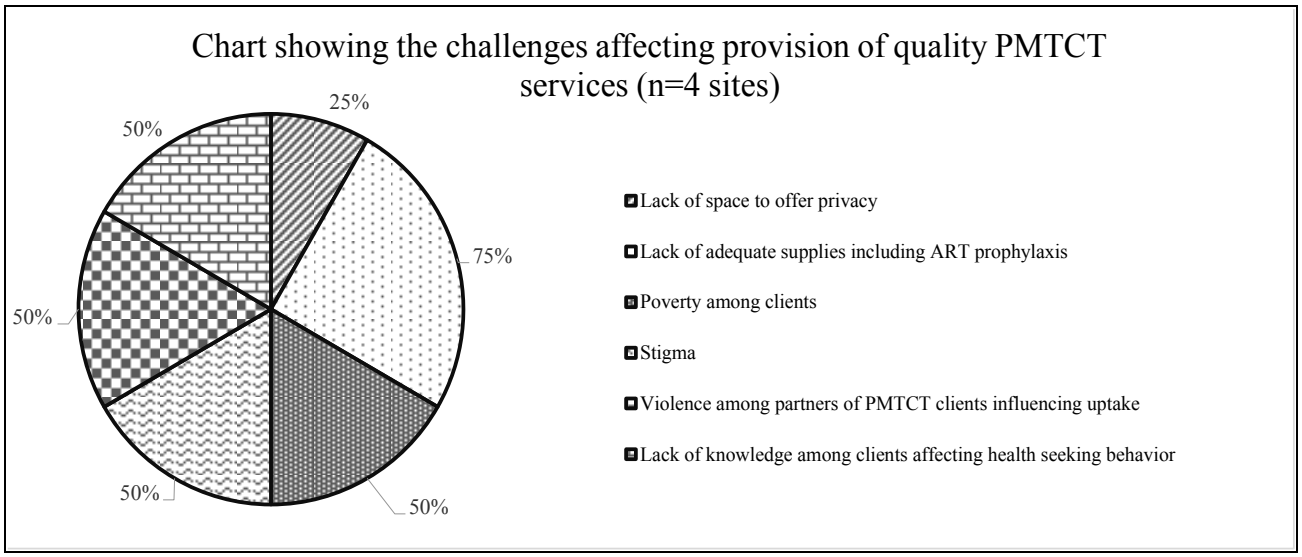

Figure 3: Challenges affecting quality PMTCT service delivery

The following chart represents the interventions done to address the challenges faced:

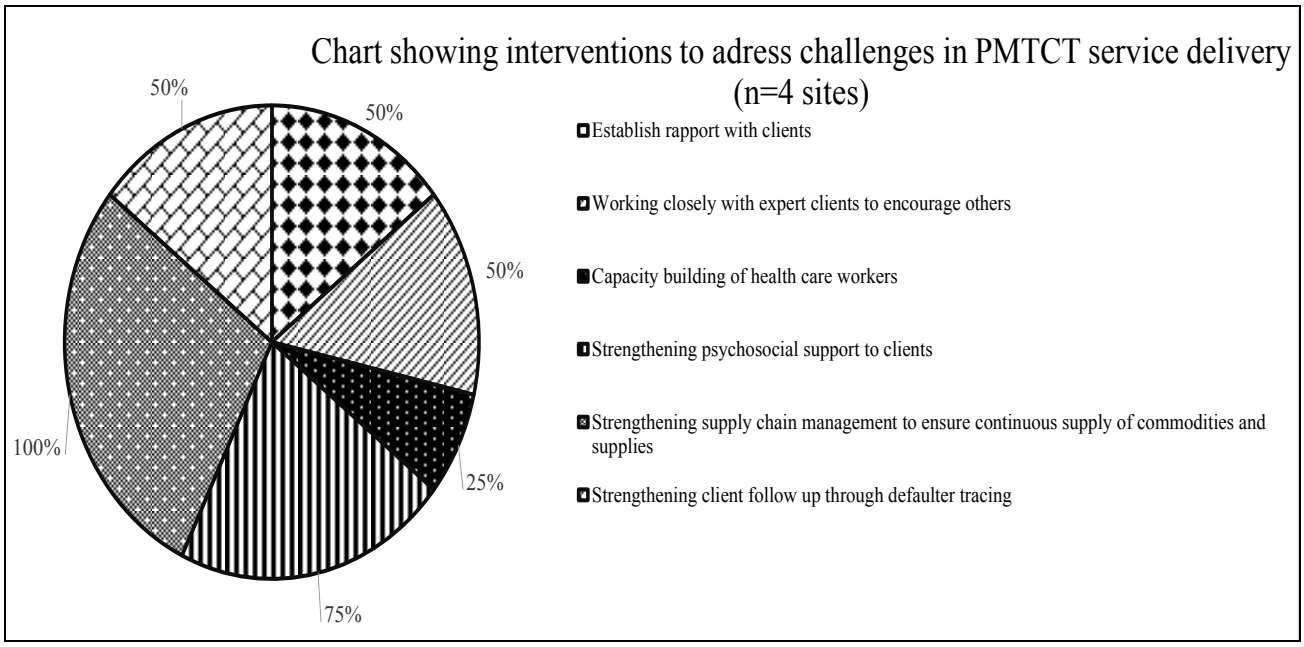

Figure 4: Interventions done to address challenges in PMTCT service delivery

The responses from the KIIs showed that all the study facilities use standard tools to measure quality improvement. These tools are HIV-exposed infant cards, viral load tracking register, data abstraction tools and minutes taken during the work improvement meetings. Other tools used to measure QI are run charts, PDSA graphs, client exit forms, and data review minutes. All these tools are important in determining the progress of quality improvement interventions.

The study respondents felt that management plays a critical role in ensuring the implementation of quality improvement. This includes providing support supervision, ensuring adequate supplies, and commodities for service provision, ensuring that staff are capacity built and receive regular updates in their service areas, providing good governance as well as continuous monitoring and reviewing QI projects. Additionally, the management should ensure that all facility staff are involved in quality improvement and should strive to support the facility teams in QI implementation. This addresses the role of leadership in quality improvement.

According to the KII respondents, PMTCT clients also have a role in quality improvement by honoring clinical appointments, as well as adhering to their treatment and other instructions. Additionally, the PMTCT clients have a role in providing feedback to facility staff on the care they have received as well as being cooperative with their service providers. The clients get to learn about this during health talks given to them as they wait to receive their services.

Based on their experiences with the health facilities, the clients had very practical recommendations on how to improve the services offered at the PMTCT clinics. The

recommendations point to the interventions that need to be in place for the consumer to feel satisfied with the services received. The participants also felt that their input in quality improvement meetings was important as it provides an avenue to give their opinions with regards to quality. At Mama Lucy Kibaki Hospital, they thought it is good to have a patient representative in such meetings to give feedback particularly in mistreatment cases. At Westlands, the participants opined that such meetings would provide opportunities to address and solve conflicts, give suggestions, and build a team spirit. In the quote below, a participant from Mama Lucy highlights the issue of patient representation at the quality meetings.

"…because at times we might be mistreated by the staff but keep quiet because we don't have representatives. So, we need a representative of the patients who will speak on our behalf."

Source: Mama Lucy Kibaki Hospital FGD participant

4.5: Influence of Quality Improvement on Prevention of Mother To Child Transmission

The KII respondents cited quality improvement as an essential aspect of PMTCT service delivery, mainly because it helps in improving service delivery. This is because the HCWs can use it to identify gaps in service delivery and address them continuously while monitoring the progress made. Quality improvement enhances safety, effectiveness, and efficiency in service delivery. Through quality improvement, the facility teams have had some benefits, including reduction in MTCT rates, reduced stigma among clients, increased retention rates, and patient outcomes due to improved services, as well as increased vigilance among HCWs. The facilities were implementing QI projects, which ranged from projects tracking viral load uptake and suppression (Mama Lucy), increasing uptake of partner and family testing (Westlands), and increasing IPT uptake (Kangemi).

All these projects had a duration of six months, with the WITs tracking the indicators during data review and WIT meetings.

The review of secondary data from facility registers and DHIS reports showed that the first ANC attendance trends dropped across all the facilities between the two periods, July 2014 to June 2015 and July 2018 to June 2019. All the facilities, except Kangemi HC, where there was an increase in the absolute numbers of patients tested for HIV, had a noticeable decrease in the number of tests done at ANC between the two periods. The HIV positivity (yield) among the mothers attending ANC dropped across all the facilities with 95% ART initiation rates across the board.

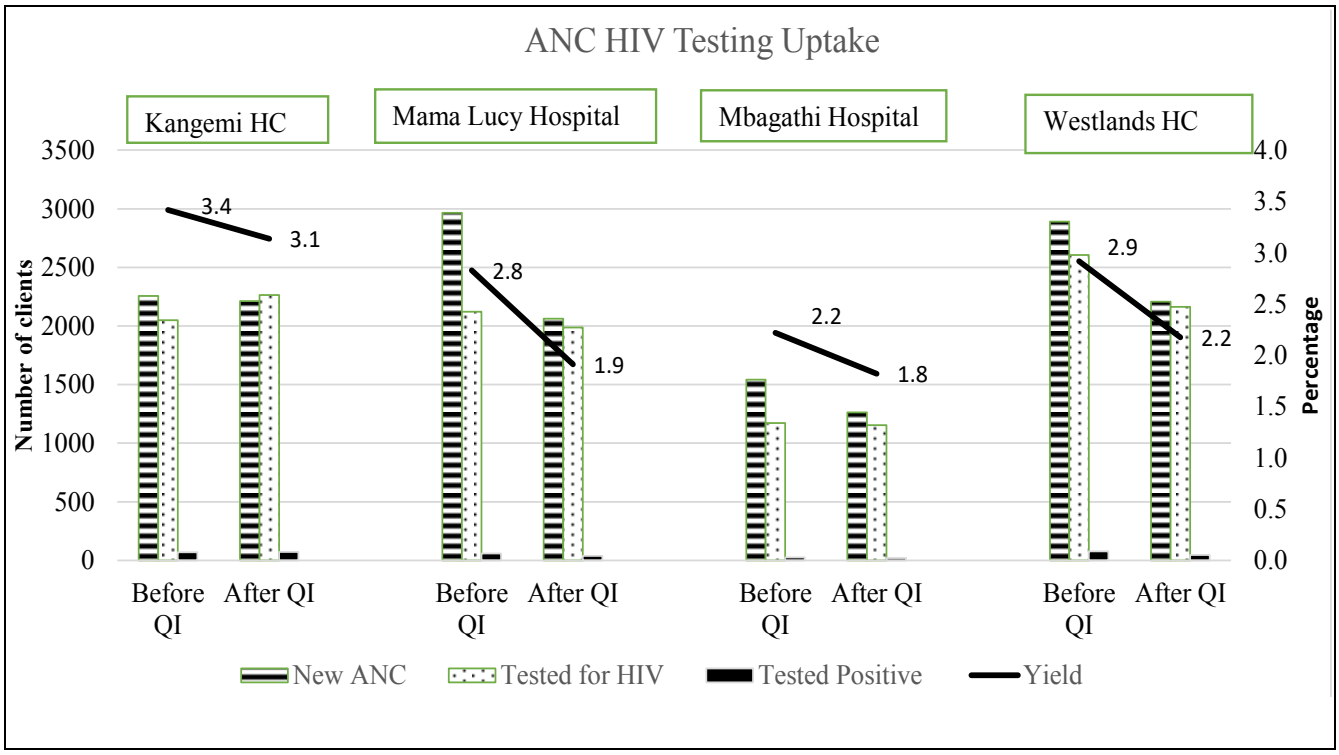

Figure 5: The HIV Services Uptake at the Antenatal Clinic; a comparison of before and after the Quality Improvement interventions

Number of PCR tests done: Except for Westlands HC, where the number of PCR tests dropped, all the other sites had an increase in the number of PCR between the two periods. However, the transmission rates increased in all the facilities.

Figure 6: The Early Infant Diagnosis (PCR) uptake within 2 months: a comparison of before and after Quality Improvement Interventions

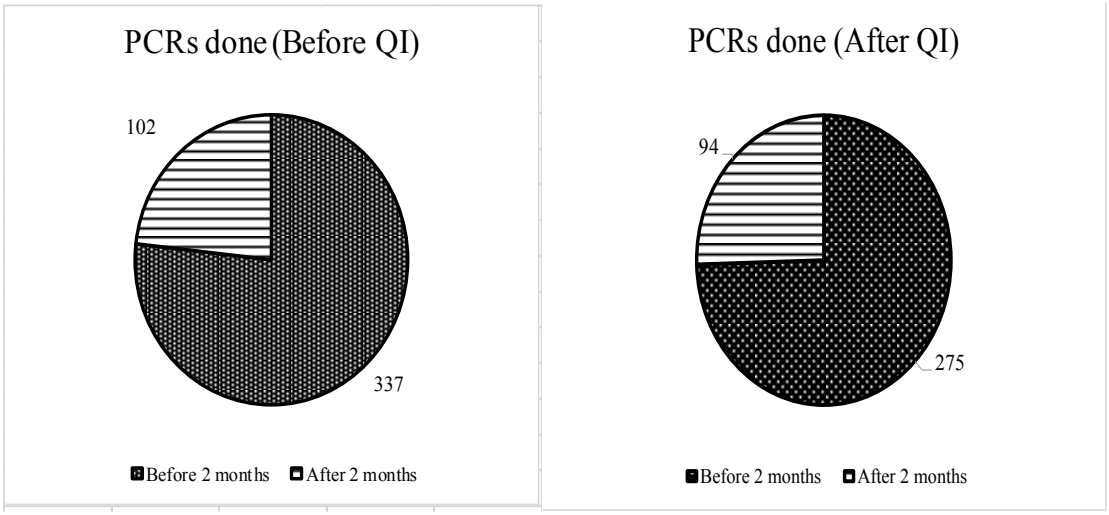

Figure 7: Overall PCR uptake: a comparison of before and after Quality Improvement Interventions

The percentage of HEIs receiving PCR for early infant diagnosis did not vary between the two periods i.e., 77% (337 PCR samples out of 439) done within 2 months in the period before QI implementation against 75% (275 PCR samples out of 369) done in the period after QI implementation.

Association between variables

A cross-tabulation to check the overall uptake of HIV testing services before and after QI implementation showed significant difference with a chi-square test of 1050.126 with a p value of 0.00001 at 0.05 level of significance. A cross-tabulation to check early infant diagnosis within two months of birth for the period before and after QI implementation showed that there was no significant difference with a chi-square statistic of 0.8122 with a p-value of 0.367482 at 0.05 level of significance.

4.6: Influence of Quality Improvement on Retention to Care

The secondary data review showed unavailability of data on 24-month retention (PMTCT completion) in the period before 2016. However, the introduction of the maternal cohort analysis provided an insight into the retention rates for PMTCT mothers from 2016, and it is in use in the facilities to track retention. The graph below represents the retention trends for mothers enrolled in PMTCT in 2016 to 2017 and completing the PMTCT program in 2018 to 2019. The results show an increase in the absolute numbers of PMTCT clients enrolled and retained up to the completion of the PMTCT program.

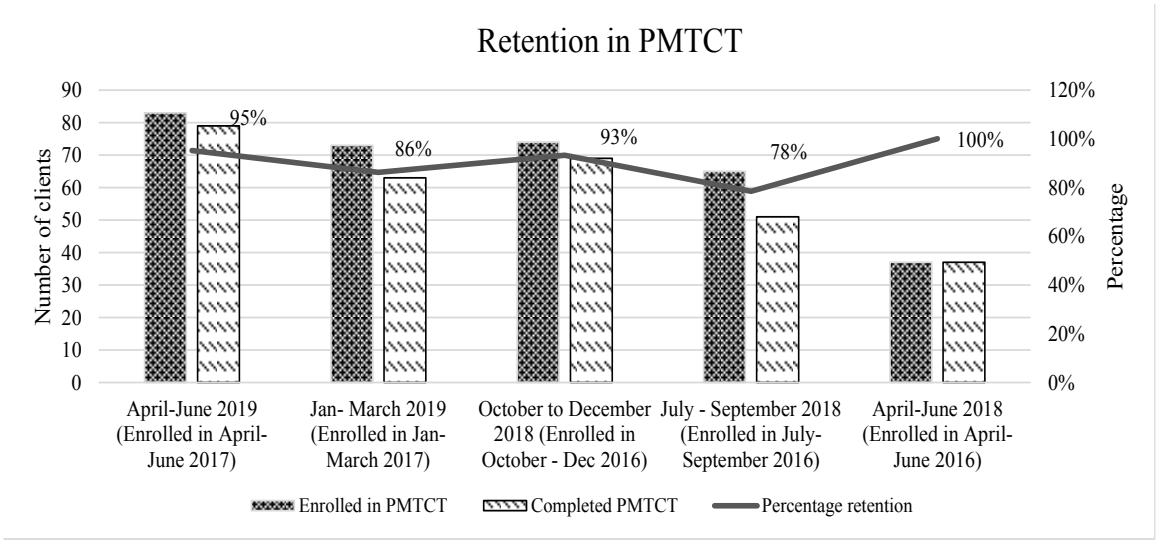

Figure 8: Retention of the mother-baby pair in PMTCT: a comparison between the numbers enrolled and those retained up to the end of 24 months

The focus group discussions brought forth key insights into the clients, perception and experience as they access PMTCT services in the different facilities. The services offered to pregnant and breastfeeding women fall under the following six categories: triaging, counselling and testing services for adults and children, support groups, drug administration, family planning services for mothers, and lessons on nutrition.

When analysing why the mothers decided to access the services at the facilities, several cross-cutting themes emerge. First, many patients came to the facility because they were pregnant. Once at the clinic, they were tested and diagnosed to be positive, after which they receive PMTCT services available at the facilities. Various reasons made them stick with the said facilities, including proximity of the health facility to their places of living, guaranteed health care from

qualified staff, availability of drugs, and caring staff at the facilities. A few mothers received referrals to the facilities by their spouses and relatives.

Regarding what they liked about the services, the respondents spoke about the facilities and the staff members at the facilities. Concerning the facilities, most participants liked that the facilities were clean, drugs are available, and that patients' records were up to date. Most participants also appreciated the fact that they received free quality services. The staff at all the facilities received a commendation for their professional approach, friendly and understanding demeanour, and the fact that most treated the patients equally and helped in stigma mitigation. This is as highlighted by the following quote from a Kangemi FGD participant:

"If you are afraid to talk to your husband about your status, they help you talk to him." **Source: Kangemi Health Centre FGD participant**

Regarding whether they would recommend the facility to their family or friends, the participants were very positive. The respondents cited good quality services, friendly and welcoming staff, fair treatment, and cleanliness of the facilities as reasons for the positive recommendations. On the other hand, delayed service and undue favouritism were the reasons for the negative recommendations. At Mama Lucy, respondents decried the issue of privacy for PMTCT mothers, as seen below:

"I also feel that for us who are positive we should have our specific place…"

"Yes, because sometimes there are some people who come here, and we go to the same church and we feel like they might know our condition."

Source: Mama Lucy Kibaki Hospital FGD participants

CHAPTER FIVE: DISCUSSION

5.1: Introduction

This chapter provides a discussion based on the study results. The discussion is presented in line with the study objectives.

5.2: Factors Influencing Implementation of Quality Improvement Approaches

The study established that all the sites under study had several factors influencing the implementation of quality improvement approaches, which involve both facility and client factors. Some of these factors are the identified gaps in service delivery, Staff shortage and heavy workload limiting the ability to conduct meetings, lack of co-operation between the teams (staff and clients) affecting teamwork as well as client involvement in QI. In addition, the presence of support from facility management and availability of data to identify performance gaps as well as monitor performance against targets influenced QI. This is consistent with other studies done in Kenya showing challenges in QI implementation that involved the use of both primary and secondary sources of data to make conclusions and targeted health care providers (Murungami, 2014).

At the facility level, participation by the management on QI is a vital factor because they are responsible for providing oversight and leadership on quality improvement and bringing the whole facility teams on board with QI. The management is key in providing support supervision, ensuring adequate supplies and commodities for service provision, ensuring that staffs are capacity built and receive regular updates in their service areas, providing good governance as well as continuous monitoring and reviewing QI projects. The level of management involvement in QI may be influenced by the position held, as those in senior positions may have more responsibilities within

the facility, thereby task shifting the QI process to other levels of staff. This, however, does not negate the importance of management involvement in QI. For any QI initiative to be successful, management support is crucial. This is consistent with other studies where the involvement of management was vital in the success of Quality Improvement (Youngleson et al., 2010).

The level of teamwork among the members of the work improvement team (WIT) also affects the implementation of QI. The WIT is normally comprised of different cadres of staff whose input is crucial for quality improvement. The teams have to be committed and have to meet regularly to be able to identify and address gaps in service delivery as part of the CQI process. This team should also include clients whose perspective is key and can provide valuable insights in improving the quality of services that they receive. With this feedback, the facility can implement services that cater to the needs of the client, while ensuring adherence to the minimum standards of patient care. It is noteworthy that other studies demonstrated the importance of teamwork and commitment to the QI process. Continued capacity building, regular meetings, and engagement served contributed to the successful implementation of QI in these study areas (Barker et al., 2015); (Mutanda et al., 2017); (Bradley and Igras, 2005).

The study also found out that the availability of accurate data to monitor the performance of the indicators under review affects quality improvement. It is not possible to monitor improvement without data, which undergoes periodic review to identify and address gaps. This forms part of the process in CQI.This concurs with studies done showing consistent data use in QI implementation in other countries. Quality Improvement was used by the teams to improve the completeness and accuracy of data that is used to monitor the PMTCT program (Mphatswe et al., 2012); (Doherty et

al., 2009). The study facilities use standard tools to monitor the QI process which include HIV-exposed infant cards, viral load tracking register, data abstraction tools, and minutes taken during the work improvement meetings. In addition, the facilities use run charts, PDSA graphs, client exit, forms, and data review minutes to monitor the QI process. This is in line with the recommendations made in KHQIF (MOH, 2014).

5.3. Influence of Quality Improvement on Prevention of Mother To Child Transmission Outcomes

The study established that the implementation of quality improvement approaches has improved PMTCT service delivery, as shown from the trends in the performance indicators and client feedback. The HCWs are committed to ensuring that they identify and address gaps in service delivery through CQI, all to ensure that they are taking care of their clients' satisfaction. The study found out that all four facilities offer a standard package of care consistent across the board, which is in line with the recommendations in the PMTCT guidelines (WHO (Geneva), 2010).

The decline in numbers of women getting pregnant contributed to the reduction in trends in the first ANC visits. However, the uptake of HIV testing among the clients in the first ANC visit has improved with reduced missed opportunities signifying an improvement in the package of services offered. This is consistent with national and county trends (NASCOP and NACC, 2018). The yield in HIV positivity also reduced, with all newly diagnosed clients started on ART in line with the guidelines. This signifies that the facilities under study offer services that are in line with the guidelines, and strive to ensure its application when offering PMTCT services. The trends in mother to child transmission did increase over the period, which might be due to clients accessing

care later in their pregnancy. This delays diagnosis and subsequent treatment prophylaxis for both mother and child. These findings were consistent with the national figures (NASCOP and NACC, 2018). Additionally, QI implementation has led to the consistent use of data to track the performance of PMTCT indicators. The availability of quality data has ensured that the facilities have an opportunity to implement data-informed interventions. In this way, they can cater to the needs of their clients.

5.4: Influence of Quality Improvement on Retention to Care

Customer satisfaction is the most important aspect of quality health care (Gupta and Rokade, 2016). It is key determinant of whether a client will return to a facility for service delivery. Having integrated services for the mother-baby pairs in which they receive services as a one-stop-shop fosters retention. Other studies have shown the same findings on the integration of services and retention where the mother-baby pairs were more likely to receive PMTCT interventions and be retained with integrated services (Tudor Car et al., 2011). The study established that the quality of PMTCT services offered across the four facilities under study generally satisfy the clients needs. These clients would gladly recommend the services to their family and friends. Services across the four study facilities are integrated and the mother can get all the required services at a go, which improves efficiency and retention. Having a one stop shop for the clients is key in ensuring that services are provided in a way that meets their needs and ensures customer satisfaction. Data on retention seems to corroborate this as the facilities have good retention rates across the board. The presence of quality services, and customer satisfaction is what was able to motivate the clients to keep attending the clinic, hence the good retention rates. The results also show that healthcare providers' attitude as they offer services to clients affects retention. These results are consistent

with those found in other studies where the healthcare workers who took part in quality improvement consistently strove to better themselves while providing services through changing their attitude (Bradley and Igras, 2005). The staff at all the facilities received a commendation for their professional approach, friendly and understanding demeanour, and the fact that most treated the patients equally and helped in stigma mitigation. The facility environment affects the clients' decision to access care at a particular facility, with clean and well-organized facilities being favoured over the less clean ones. The reduction in stigma through the counselling services and psychosocial support offered at the facilities was also key in fostering retention.

5.5: Study Limitations

The researcher chose the facilities purposefully based on an inclusion and exclusion criteria that is restrictive in nature. Due to this, the study findings may not be extrapolated or generalized to other health care facilities in Nairobi County. The researcher based the study on a review of reported data, which may be subject to errors based on the process of data capture in the original documents. Also, some records may have been misplaced. In this case, the researcher relied on information reported in the DHIS. The PMTCT indicators in the DHIS underwent revision in 2016 to include some missing indicators in the earlier versions. All the four facilities had consistently been reporting in the DHIS during the period in question, with reporting improving after Quality Improvement implementation. There may, however, been some information bias based on data entry errors. The study relied on the participants' opinions discussed in a group setting. This made it susceptible to having the views of some participants dominating the conversation and limiting the interaction with the quiet ones. However, the study reduced this by ensuring that the research assistants had the required expertise in moderating focus group discussions.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1: Introduction

This chapter provides the conclusion and recommendation based on the findings of the study. The recommendations focus more on scaling up the best practices from implementing QI in PMTCT service delivery.

6.2: Conclusion

Implementing QI in PMTCT in the study facilities has led to efficient services, customer satisfaction, and improved outcomes. Through QI, the HCWs strive to offer a comprehensive package of services that cater to the clients' needs while ensuring good patient outcomes for both the mother and baby. From the feedback received from the clients, the attitude of the health care workers towards them influences whether they would access services in a particular facility. Additionally, the situation of the environment also determines accessibility and retention. The clients showed satisfaction with services offered to them, which means that QI implementation has positively effected service delivery. To enhance the work of the QI team, it is essential to involve consumers in the process of QI implementation. This is because the consumers provide valuable feedback on the healthcare delivery experience, revealing the areas that would benefit from improvement. Their ideas on improvement are very different from the ones presented by the health workers. Client involvement is key to ensuring customer satisfaction. The success of QI implementation relies on having support and participation from the facility management and teams who are committed to the process. Additionally, completeness and accuracy of data allows for performance monitoring and is crucial in demonstrating the improvement of the services offered.

6.3: Recommendations

Findings in this study showed that the Implementation of QI approaches in PMTCT helped improve the efficiency of the care and services offered. Management involvement in the QI process is vital for the success of QI in any given facility. As a result, the study recommends scaling up quality improvement to cover other service delivery areas. That management is at the forefront in QI implementation. The study also recommends that facilities involve the customer in the QI process. The study respondents were mostly satisfied with the services received but felt that there is room for improvement in ensuring a consistent supply of commodities and expansion of services. Additionally, clients could benefit from more private services. Integration of services (PMTCT in MCH clinic) fosters retention. For this reason, the study recommends continued integration of PMTCT services in the MCH clinics within Nairobi County.

References

Barker, P., Barron, P., Bhardwaj, S., Pillay, Y., 2015. The role of quality improvement in achieving effective large-scale prevention of mother-to-child transmission of HIV in South Africa. AIDS Lond. Engl. 29 Suppl 2, S137-143. https://doi.org/10.1097/QAD.0000000000000718

Batalden, P.B., Davidoff, F., 2007. What is "quality improvement" and how can it transform healthcare? Qual. Saf. Health Care 16, 2–3. https://doi.org/10.1136/qshc.2006.022046

Bradley, J., Igras, S., 2005. Igras S: Improving the quality of child health services: participatory action by providers, in: International Journal for Quality in Health Care 2005. pp. 17–391.

Cock, K.M.D., Fowler, M.G., Mercier, E., Vincenzi, I. de, Saba, J., Hoff, E., Alnwick, D.J., Rogers, M., Shaffer, N., 2000. Prevention of Mother-to-Child HIV Transmission in Resource-Poor Countries: Translating Research Into Policy and Practice. JAMA 283, 1175–1182. https://doi.org/10.1001/jama.283.9.1175

Doherty, T., Chopra, M., Nsibande, D., Mngoma, D., 2009. Improving the coverage of the PMTCT programme through a participatory quality improvement intervention in South Africa. BMC Public Health 9, 406. https://doi.org/10.1186/1471-2458-9-406

Donabedian, A., 2002. An Introduction to Quality Assurance in Health Care. Oxford University Press.

Gupta, K.S., Rokade, V., 2016. Importance of Quality in Health Care Sector: A Review. J. Health Manag. 18, 84–94. https://doi.org/10.1177/0972063415625527

Hashmi, K., 2013. Introduction and Implementation of Total Quality Management (TQM). URL https://www.isixsigma.com/methodology/total-quality-management-tqm/introduction-and-implementation-total-quality-management-tqm/ (accessed 3.22.18).

Health Resources and Services Administration, 2011.

IOM, 2018. Crossing the Quality Chasm: The IOM Health Care Quality Initiative : Health and Medicine Division [WWW Document]. URL http://www.nationalacademies.org/hmd/Global/News%20Announcements/Crossing-the-Quality-Chasm-The-IOM-Health-Care-Quality-Initiative.aspx (accessed 3.20.18).

Kayongo, M., Butera, J., Mboninyibuka, D., Nyiransabimana, B., Ntezimana, A., Mukangamuje, V., 2006. Improving availability of EmOC services in Rwanda — CARE's experiences and lessons learned at Kabgayi Referral Hospital. Int. J. Gynecol. Obstet. 92, 291–298. https://doi.org/10.1016/j.ijgo.2005.10.030

KNBS, 2019. 2019 Kenya Population and Housing Census.

MOH, 2019. Kenya Master Health Facility List. URL http://kmhfl.health.go.ke/#/home (accessed 11.19.19).

MOH, 2014. Kenya HIV Quality Improvemebt Framework (KHQIF).

Mphatswe, W., S Mate, K., Bennett, B., Ngidi, H., Reddy, J., M Barker, P., Rollins, N., 2012. Improving public health information: a data quality intervention in KwaZulu-Natal, South Africa. Bull. World Health Organ. 90, 176–82. https://doi.org/10.2471/BLT.11.092759

Mugenda, O., Mugenda, A., 2008. Research Methods: Qualitative and Quantitative Approaches.

Murungami, R.W., 2014. Challenges Of Implementing Kenya Quality Model For Health Strategy In Kiambu County, Kenya 53.

Mutanda, P., Muange, P., Lutta, M., Kinyua, K., Chebet, L., Okaka, B., Mwamzandi, Y., Mwavita, J., 2017. Improving prevention of mother to child transmission of HIV care: Experiences from implementing quality improvement in Kenya 45.

Mwaniki, M.K., Vaid, S., Chome, I.M., Amolo, D., Tawfik, Y., Kwale improvement coaches, 2014. Improving service uptake and quality of care of integrated maternal health services: the Kenya kwale district improvement collaborative. BMC Health Serv. Res. 14. https://doi.org/10.1186/1472-6963-14-416

NASCOP, 2012. Guidelines for Prevention of Mother to Child transmission (PMTCT) of HIV in Kenya, 4th edition.

NASCOP HIV QI, 2018. . NASCOP. URL http://www.nascop.or.ke/?page_id=2324 (accessed 3.21.18).

NASCOP, NACC, 2018. Kenya HIV Estimates.

NASCOP, NACC, 2016. Kenya HIV County Profiles.

Padian, N., McCoy, S., Karim, A., Hansen, N., Kim, J., Bartos, M., Katabira, E., Bertozzi, S., Shwartlander, B., Cohen, M., 2011. HIV prevention transformed: the new prevention research agenda - The Lancet [WWW Document]. URL http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(11)60877-5.pdf (accessed 3.21.18).

Schroeder, R.G., Linderman, K., Zhang, D., 2009. Evolution of Quality: First Fifty Issues of Production and Operations Management. Prod. Oper. Manag. 14, 468–481. https://doi.org/10.1111/j.1937-5956.2005.tb00234.x

Tudor Car, L., van-Velthoven, M.H., Brusamento, S., Elmoniry, H., Car, J., Majeed, A., Atun, R., 2011. Integrating prevention of mother-to-child HIV transmission (PMTCT)

programmes with other health services for preventing HIV infection and improving HIV outcomes in developing countries, in: The Cochrane Library. John Wiley & Sons, Ltd. https://doi.org/10.1002/14651858.CD008741.pub2

USAID ASSIST, 2015. Kenya Quality Model for Health: A Training Course for the Health Sector | USAID ASSIST Project [WWW Document]. URL https://www.usaidassist.org/resources/kenya-quality-model-health-training-course-health-sector (accessed 3.21.18).

Wamuyu, G.M., 2015. Total Quality Management in Kenya's Healthcare Industry 65.

WHO (Geneva), 2010. PMTCT strategic vision 2010-2015 preventing mother-to-child transmission of HIV to reach the UNGASS and Millennium development goals: moving towards the elimination of paediatric HIV. World health organization (WHO), Geneva.

World Health Organization, 2007. Everybody's business: strengthening health systems to improve health outcomes : WHO's frmaework for action. World Health Organization, Geneva.

Wouters, A., 1995. Improving quality through cost recovery in Niger. Health Policy Plan. 10, 257–270. https://doi.org/10.1093/heapol/10.3.257

Youngleson, M.S., Nkurunziza, P., Jennings, K., Arendse, J., Mate, K.S., Barker, P., 2010. Improving a Mother to Child HIV Transmission Programme through Health System Redesign: Quality Improvement, Protocol Adjustment and Resource Addition. PLOS ONE 5, e13891. https://doi.org/10.1371/journal.pone.0013891

APPENDIX 1: FOCUS GROUP DISCUSSION GUIDE

INTRODUCTION

(Before beginning the focus group discussion, ensure that all participants give informed consent).

"Hello, my name is Duece Malava. I am a student at University of Nairobi, School of Public Health. This is my team. We are conducting an assessment on the effect of quality improvement approaches on Prevention of Mother to Child Transmission coverage in our health facility. The aim of this focus group is to find out more about your experiences in accessing service in the PMTCT clinic. This will help us to assess the quality of services provided in the PMTCT clinic. The discussion should take one and a half hours. I will ask questions during the discussions, and your responses will be noted down by my colleague. These discussions will also be held in other facilities. The findings for the discussion will be used to come up with a report that might be presented in health forums, or published. Your names will not be included in the report and there will be no direct benefit from participating in the discussion. If at any time you feel uncomfortable in proceeding with the discussion, you are free to leave, or not answer any more questions. If at any time you have questions you are free to interrupt the discussion as you seek clarification.

Are there any questions? Is it ok to start?"

Facility name:	**Date**
Start/End Time: Start: **End:**	
Focus group discussion facilitator:	
Note-takers:	

Translation used for interview: Yes No
If yes: **Translation from _____(language)** **to _____(language)**
Number of participants in this group (total):
Gender of FGD participants: (specify number) _____ ☐ <18 years (specify number) _____ ☐ 18-24 years (specify number) _____ ☐ 25-49 years (specify number) _____

QUESTIONS

1. What factors made you decide to access services in this facility?
2. How has accessing services in this facility been helpful to you?
3. Have you considered accessing services in a different facility? Why? Why Not?
4. What are some of the services offered to a pregnant and breastfeeding woman?
5. What comes to mind when you hear about PMTCT?
6. What are our experiences in accessing services in the PMTCT clinic?

   What do you like most about the services?

   What don't you like about the services?

   Would you come here for your next pregnancy? Why? Why not?

   Would you recommend this facility to your friend and family? Why? Why not?

7. What in your opinion could be done to make the services offered in the PMTCT clinic better than they are?
8. Is it important for you to be involved in quality meetings? Why? Why not?

That marks the end of our focus group. Thank you so much for sparing your time and for sharing your thoughts and opinions with us. Your input has been very valuable to us. Thank you once again.

APPENDIX II: FOCUS GROUP DISCUSSION INFORMATION AND CONSENT FORM

INTRODUCTION

Hello, my name is Duece Malava. I am a student at University of Nairobi, School of Public Health. This is my team. I would like to tell you about a study we are doing. Feel free to ask questions concerning your participation including about any risks and benefits as well as about your right as a research participant. Once we have been able to answer your questions, you may decide to participate or not, since participation is entirely voluntary and will not affect the services rendered to you today. Should you decide to participate, you may withdraw from the study at any point without it having a negative effect on the services that you receive. We will give you a copy of this form for your records. May I proceed? YES/NO

This study has been approved by the Kenyatta National Hospital- University of Nairobi Ethics and Research Committee Protocol No. _____

WHAT IS THIS STUDY ABOUT?

The researchers listed above are conducting an assessment on the effect of quality improvement approaches on Prevention of Mother to Child Transmission coverage in our health facility. The purpose of this focus group is to find out more about your experiences in accessing service in the PMTCT clinic. This will help us to assess the quality of services provided in the PMTCT clinic.

WHAT WILL HAPPEN DURING THE DISCUSSION?

If you agree to participate in the study, the following will happen:

You will be part of a focus group discussion, which should take one and a half hours. I will ask questions during the discussion, and your responses will be noted down by my colleague, who will also be recording the discussion to enable us to compile a report afterwards. These discussions will also be held in other facilities. The findings for the discussion will be used to come up with a report that might be presented in health forums, or published. Your name will, however, not be included in the reports.

WHAT ARE THE RISKS FOR PARTICIPATING?

You may have instances where your voice may not be heard during the discussion. The team conducting the research will help prevent this by ensuring that the session is moderated and that all have been given a chance to speak.

There may also be loss of privacy. However, we will keep everything you tell us as confidential as possible. No mention of your name will be included in the questionnaire as we will be using a code number to identify you in a password protected database. The paper records will all be stored in a locked file cabinet

WHAT ARE THE BENEFITS FOR PARTICIPATING?

You will not receive any direct benefit from participating in the discussion. There will be no transport or lunch allowance to be provided.

WHAT ARE THE COST IMPLICATIONS OF BEING IN THE STUDY?

You will not be required to pay any money to participate in the study.

WHAT IF I HAVE QUESTIONS IN FUTURE?

If you have further questions about the study, you may reach out to any study staff as listed at the bottom of this page.

For more information about your rights as a research participant you may contact the Secretary/Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email uonknh_erc@uonbi.ac.ke.

WHAT ARE MY OTHER CHOICES?

Your decision to participate is entirely voluntary. If at any time you feel uncomfortable in proceeding with the discussion, you are free to leave, or not answer any more questions. If at any time you have questions you are free to interrupt the discussion as you seek clarification.

STATEMENT OF CONSENT

- I ……. willingly agree to take part in this focus group discussion.
- I know the topics that are to be discussed in the focus group
- I understand that even if I agree to participate, withdrawal from participation can be done at any time. I can also refuse to answer any more questions if I feel uncomfortable.
- I am aware that my name will not be mentioned anywhere, and I will remain anonymous throughout the research process. I will not be linked in any way to the results obtained.
- I agree to have the discussions recorded so that they can be transcribed at a later date once the discussions are complete

- I understand that what I say may be quoted without linking the information directly to me. My name will not be mentioned anywhere when writing the report.
- I understand that I will not receive any direct benefit from participating in this focus group discussion.
- I understand that I am free to ask any questions or seek clarifications when needed to be able to fully understand the process.

Signature of research participant

Participants Name _____ Date _____

Signature of research participant _____

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Researchers Name _____ Date _____

Signature of researcher _____

Signature of Witness (A witness is someone who is mutually acceptable to the researcher and participant)

Witness Name _____ Date _____

Signature / Thumb stamp _____

TRANSLATED CONSENT FORM IN SWAHILI

UTANGULIZI

Jambo, jina langu ni Duece Malava. Mimi ni mwanafunzi katika Chuo Kikuu cha Nairobi, Shule ya Afya ya Umma. Hii ni timu yangu. Ningependa kukuambia kuhusu utafiti tunayofanya. Jisikie huru kuuliza maswali kuhusu ushiriki wako ikiwa ni pamoja na hatari yoyote na faida pamoja na haki yako kama mshiriki wa utafiti. Mara tu tumeweza kujibu maswali yako, unaweza kuamua kushiriki au la, kwa kuwa kushiriki ni kikamilifu kwa hiari na haitaathiri huduma zinazotolewa kwako leo. Ukiamua kushiriki, unaweza kuondoka kwenye utafiti wakati wowote bila kuwa na athari mbaya kwenye huduma unazozipata. Tutakupa nakala ya fomu hii kwa rekodi zako. Naweza kuendelea? NDIO/ LA

Utafiti huu umekubaliwa na Hospitali ya Taifa ya Kenyatta - Chuo Kikuu cha Nairobi Kitivo cha Maadili na Utafiti wa Itifaki No _____

UTAFITI UNAHUSU NINI?

Watafiti waliotajwa hapo juu wanafanya tathmini juu ya athari za mbinu za kuboresha ubora juu ya huduma ya PMTCT katika kituo cha afya. Lengo la kikundi hiki cha kutazama ni kujua zaidi kuhusu uzoefu wako katika kupata huduma katika kliniki ya PMTCT. Hii itatusaidia kutathmini ubora wa huduma zinazotolewa katika kliniki ya PMTCT.

NINI KITATOKEA WAKATI WA MAZUNGUMZO?

Ikiwa unakubali kushiriki katika utafiti, zifuatazo zitatokea:

Utakuwa sehemu ya mjadala wa kikundi cha kutafakari ambayo inapaswa kuchukua masaa moja na nusu. Wakati wa majadiliano, nitawauliza maswali na majibu yako yatafahamishwa na

mwenzangu, ambaye pia ataandika majadiliano ili kutuwezesha kukusanya ripoti baadaye. Majadiliano haya pia yatafanyika katika vituo vingine. Matokeo ya majadiliano yatatumika kutengeza ripoti ambayo inaweza kuwasilishwa kwenye vikao vya afya, au iliyochapishwa. Jina lako, hata hivyo, halitaingizwa katika ripoti.

NI ATHARI GANI INAWEZA KUTOKEA NIKIHUSIKA?

Unaweza kuwa na matukio ambapo sauti yako haiwezi kusikika wakati wa majadiliano. Timu inayofanya utafiti itasaidia kuzuia hili kwa kuhakikisha kwamba kikao ni cha wastani na kwamba wote wamepewa nafasi ya kuzungumza.

Kunaweza pia kupoteza faragha. Hata hivyo, tutaweka kila kitu unachotuambia kama siri iwezekanavyo. Hakuna kutaja jina lako kutajumuishwa katika dodoso kama tutatumia namba ya nambari ili kukutambua kwenye databti la salama ya nenosiri. Kumbukumbu za karatasi zitahifadhiwa katika baraza la mawaziri lililofungwa

NI FAIDA GANI ZA KUSHIRIKIANA?

Hutapata faida yoyote ya moja kwa moja kutokana na kushiriki katika mazungumzo. Hakutakuwa na misaada ya usafiri au ya chakula cha mchana itatolewa.

NI MALIPO GANI NAPASWA KULIPA KUSHIRIKI?

Hutatakiwa kulipa pesa yoyote kushiriki katika utafiti.

NA NIKIWA NA MASWALI YA ZIADA?

Ikiwa una maswali zaidi juu ya utafiti, unaweza kufikia wafanyakazi wowote wa utafiti kama ilivyoorodheshwa chini ya ukurasa huu.

Kwa habari zaidi kuhusu haki zako kama mshiriki wa utafiti unaweza kuwasiliana na Katibu / Mwenyekiti, Kenyatta National Hospital-Chuo Kikuu cha Nairobi Maadili na Utafiti Kamati Namba Namba 2726300 Ext. 44102 barua pepe uonknh_erc@uonbi.ac.ke.

NINAWEZA FANYA UAMUZI KUSHIRIKI?

Uamuzi wako wa kushiriki ni kikamilifu kwa hiari. Ikiwa wakati wowote unahisi wasiwasi katika kuendelea na majadiliano, wewe ni huru kuondoka, au usijibu maswali yoyote zaidi. Ikiwa una wakati wowote unayo maswali unastahili kuzuia mjadala unapotafuta ufafanuzi.

TAARIFA YA IDHINI

- Mimi ..... kwa hiari kukubali kushiriki katika mjadala huu wa kikundi.
- Ninafahamu mada ambayo yanajadiliwa katika kikundi cha kuzingatia
- Nafahamu kwamba hata kama mimi kukubali kushiriki, naweza kutoa ushiriki wa fomu wakati wowote. Naweza pia kukataa kujibu maswali yoyote zaidi ikiwa ninahisi wasiwasi.
- Nafahamu kuwa jina langu halitafanywa mahali popote, na nitabaki bila kujulikana katika mchakato wa utafiti. Siwezi kuunganishwa kwa njia yoyote kwa matokeo yaliyopatikana.
- Nakubaliana kuwa na majadiliano yaliyoandikwa ili waweze kuandikwa kwa tarehe baadaye baada ya majadiliano yamekamilishwa
- Ninaelewa kwamba kile ninachosema kinaweza kunukuliwa bila kuunganisha habari moja kwa moja kwangu. Jina langu halitafanywa mahali popote wakati wa kuandika ripoti.
- Ninaelewa kwamba hakuna faida moja kwa moja kutoka kushiriki katika majadiliano ya kikundi hiki.

- Ninaelewa kuwa mimi ni huru kuuliza maswali yoyote au kutafuta ufafanuzi wakati inahitajika ili kuweza kuelewa mchakato.

Saini ya mshiriki wa utafiti

Jina la mshiriki _____ Tarehe _____

Sahihi ya mshiriki _____

Sahihi ya mtafiti

Naamini mshiriki huyo anatoa ruhusa ya kushiriki katika utafiti huu

Jina la mtafiti _____ Tarehe _____

Sahihi ya mtafiti _____

Saini ya Shahidi (Shahidi ni mtu anayekubaliana na mtafiti na mshiriki)

Jina la Shahidi _____ Tarehe _____

Sahihi / alama ya kidole cha gumba _____

APPENDIX III: KEY INFORMANTS INTERVIEW GUIDE

EFFECT OF QUALITY IMPROVEMENT APPROACHES ON PREVENTION OF MOTHER TO CHILD TRANSMISSION COVERAGE

Introduction: The aim of this interview is to identify the quality improvement interventions that have been done, and to determine their effect on the overall PMTCT outcomes.

1. Your Position in the MCH……
2. How busy is your MCH in terms of number of ANC visits per day?

Below 50 mothers ( ) 50 - 100 mothers ( ) 101-200 mothers ( ) More than 200 mothers ( )

3. What year did your MCH start operations? Please indicate _____
4. Number of years worked at the MCH?

Below 2 years ( ) 3-5 years ( ) 6-8 years ( ) More than 9 years ( )

5. What is your highest academic qualification?

Certificate ( ) Diploma ( ) Degree ( ) Masters ( ) PhD ( )

6. Please indicate your level of involvement in the work improvement team

High [ ] Moderate [ ] Not involved at all [ ]

7. Does your facility have a Quality Improvement team? Yes ( ) No ( ). Does it have a Work improvement team? Yes ( ) No ( )
8. What is the standard package of care that is offered to PMTCT mothers in your MCH?

……

……

……

……

……

9. Are there any challenges in providing these services? Yes ( ) No ( ) Explain

……

……

……

……

……

10. What are some of the quality improvement interventions in PMTCT that have addressed the challenges in service provision?

……

……

……

……

……

……

11. How have you measured the performance of the quality interventions in PMTCT? What tools do you use?

……

……

……

……

……

……

12. What are the factors that influence the implementation of quality improvement?

……

……

……

……

13. What is the role of management in quality improvement?

……

……

……

……

……

……

14. What can management do to further increase the uptake of quality improvement in your MCH?

……

……

……

……

……

15. Does the client have a role to play in quality improvement? Explain.

……

……

……

……

……

16. Is quality improvement important? Why? Why not?

……

……

……

……

……

……

17. How has implementing quality improvement interventions in your MCH clinic been able to effect the delivery of PMTCT services?

……

……

……

……

……

……

18. Any other comment on implementation of quality improvement in PMTCT?

……

……

……

APPENDIX II: KEY INFORMANTS INTERVIEW INFORMATION AND CONSENT FORM

INTRODUCTION

Hello, my name is Duece Malava. I am a student at University of Nairobi, School of Public Health. This is my team. I would like to tell you about a study we are doing. Feel free to ask questions concerning your participation including about any risks and benefits as well as about your right as a research participant. Once we have been able to answer your questions, you may decide to participate or not, since participation is entirely voluntary. Should you decide to participate, you may withdraw from the study at any point that you feel uncomfortable. We will give you a copy of this form for your records. May I proceed? YES/NO

This study has been approved by the Kenyatta National Hospital- University of Nairobi Ethics and Research Committee Protocol No. _____

WHAT IS THIS STUDY ABOUT?

The researchers listed above are conducting an assessment on the effect of quality improvement approaches on Prevention of Mother to Child Transmission coverage in our health facility. The purpose of this interview is to find out more about your experiences with quality improvement in the PMTCT clinic to be able to understand the implementation of quality improvement in the PMTCT clinic.

WHAT WILL HAPPEN DURING THE DISCUSSION?

If you agree to participate in the study, the following will happen:

You will be interviewed by a trained interviewer in a private area where you feel comfortable answering questions. The interview should take 30 minutes. We will be asking you questions on your experience with quality improvement approaches in your PMTCT clinic. This will help us to gain an in-depth understanding on the implementation of quality improvement in the PMTCT clinic. The findings for the interview will be used to come up with a report that might be presented in health forums, or published. Your name will, however, not be included in the reports

WHAT ARE THE RISKS FOR PARTICIPATING?

One risk of being in the study is loss of privacy. However, we will keep everything you tell us as confidential as possible. No mention of your name will be included in the questionnaire as we will be using a code number to identify you in a password protected database. The paper records will all be stored in a locked file cabinet.

Also, you may be uncomfortable in answering some questions during the interview. Should you feel uncomfortable in answering some of the questions, you are allowed to skip answering them

WHAT ARE THE BENEFITS FOR PARTICIPATING?

You will not receive any direct benefit from participating in the interview. There will be no transport or lunch allowance to be provided.

WHAT ARE THE COST IMPLICATIONS OF BEING IN THE STUDY?

You will not be required to pay any money to participate in the study.

WHAT IF I HAVE QUESTIONS IN FUTURE?

If you have further questions about the study, you may reach out to any study staff as listed at the bottom of this page.

For more information about your rights as a research participant you may contact the Secretary/Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email uonknh_erc@uonbi.ac.ke.

WHAT ARE MY OTHER CHOICES?

Your decision to participate is entirely voluntary. If at any time you feel uncomfortable in proceeding with the discussion, you are free to leave, or not answer any more questions. If at any time you have questions you are free to interrupt the discussion as you seek clarification.

(*If respondent agrees to be interviewed, interview can be started. If respondent does not agree to be interviewed stop and replace with other participant based on sampling procedure*).

STATEMENT OF CONSENT

- I …….. willingly agree to take part in this study
- I have read this consent form or had the information read to me.
- I have been provided with the chance to discuss this research study with the researcher and my questions have been answered in a language that I understand.
- The researcher has explained the risks and benefits to me.
- I understand that I am participating in this study is voluntarily and that should I choose to, I can withdraw from participation at any time.
- I freely consent to participate in this research study.

- I understand that concerted efforts at keeping my personal identity confidential will be made.

Signature of research participant

Participants Name _____ Date _____

Signature of researcher _____

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Researchers Name _____ Date _____

Signature of researcher _____

Signature of Witness (A witness is someone who is mutually acceptable to the researcher and participant)

Witness Name _____ Date _____

Signature / Thumb stamp _____

TRANSLATED CONSENT FORM IN SWAHILI

UTANGULIZI

Jambo, jina langu ni Duece Malava. Mimi ni mwanafunzi katika Chuo Kikuu cha Nairobi, Shule ya Afya ya Umma. Hii ni timu yangu. Ningependa kukuambia kuhusu utafiti tunayofanya. Jisikie huru kuuliza maswali kuhusu ushiriki wako ikiwa ni pamoja na hatari yoyote na faida pamoja na haki yako kama mshiriki wa utafiti. Mara tu tumeweza kujibu maswali yako, unaweza kuamua kushiriki au la, kwa kuwa kushiriki ni kikamilifu kwa hiari na haitaathiri huduma zinazotolewa kwako leo. Ukiamua kushiriki, unaweza kuondoka kwenye utafiti wakati wowote bila kuwa na athari mbaya kwenye huduma unazozipata. Tutakupa nakala ya fomu hii kwa rekodi zako. Naweza kuendelea? NDIO/ LA

Utafiti huu umekubaliwa na Hospitali ya Taifa ya Kenyatta - Chuo Kikuu cha Nairobi Kitivo cha Maadili na Utafiti wa Itifaki No _____

UTAFITI UNAHUSU NINI??

Watafiti waliotajwa hapo juu wanafanya tathmini juu ya athari za mbinu za kuboresha ubora juu ya chanjo ya PMTCT katika kituo cha afya. Kusudi la mahojiano haya ni kujua zaidi kuhusu uzoefu wako na kuboresha ubora katika kliniki ya PMTCT ili uweze kuelewa utekelezaji wa kuboresha ubora katika kliniki ya PMTCT.

NINI KITATOKEA WAKATI WA MAZUNGUMZO?

Ikiwa unakubali kushiriki katika utafiti, zifuatazo zitatokea:

Utashughulikiwa na mhojiwaji mwenye mafunzo katika eneo la kibinafsi ambako unajisikia kujibu maswali. Mahojiano inapaswa kuchukua dakika 30. Tutakuuliza maswali juu ya uzoefu wako na

mipango ya kuboresha ubora katika kliniki yako ya PMTCT. Hii itatusaidia kupata uelewa wa kina juu ya utekelezaji wa kuboresha ubora katika kliniki ya PMTCT. Matokeo ya mahojiano yatatumika kuja na ripoti ambayo inaweza kuwasilishwa kwenye vikao vya afya, au iliyochapishwa. Jina lako, hata hivyo, haliingizwe katika ripoti

NI ATHARI GANI INAWEZA KUTOKEA NIKIHUSIKA?

Hatari moja ya kuwa katika utafiti ni kupoteza faragha. Hata hivyo, tutaweka kila kitu unachotuambia kama siri iwezekanavyo. Hakuna kutaja jina lako kutajumuishwa katika dodoso kama tutatumia namba ya nambari ili kukutambua kwenye databti la salama ya nenosiri. Kumbukumbu za karatasi zitahifadhiwa katika baraza la mawaziri lililofungwa.

Pia, unaweza kuwa na wasiwasi katika kujibu maswali fulani wakati wa mahojiano. Unapaswa kujisikia wasiwasi katika kujibu baadhi ya maswali, unaruhusiwa kuruka kujibu

NI FAIDA GANI ZA KUSHIRIKIANA?

Hutapata faida yoyote ya moja kwa moja kutokana na kushiriki katika mahojiano. Hakutakuwa na misaada ya usafiri au ya chakula cha mchana itatolewa.

NI MALIPO GANI NAPASWA KULIPA KUSHIRIKI?

Hutatakiwa kulipa pesa yoyote kushiriki katika utafiti.

NA NIKIWA NA MASWALI YA ZIADA?

Ikiwa una maswali zaidi juu ya utafiti, unaweza kufikia wafanyakazi wowote wa utafiti kama ilivyoorodheshwa chini ya ukurasa huu.

Kwa habari zaidi kuhusu haki zako kama mshiriki wa utafiti unaweza kuwasiliana na Katibu / Mwenyekiti, Kenyatta National Hospital-Chuo Kikuu cha Nairobi Maadili na Utafiti Kamati Namba Namba 2726300 Ext. 44102 barua pepe uonknh_erc@uonbi.ac.ke.

NINAWEZA FANYA UAMUZI KUSHIRIKI?

Uamuzi wako wa kushiriki ni kikamilifu kwa hiari. Ikiwa wakati wowote unahisi wasiwasi katika kuendelea na majadiliano, wewe ni huru kuondoka, au usijibu maswali yoyote zaidi. Ikiwa una wakati wowote unayo maswali unastahili kuzuia mjadala unapotafuta ufafanuzi.

(*Kama mhojiwa anakubali kuhojiwa, mahojiano yanaweza kuanza.Kama mhojiwa hakubali kuulizwa kuacha na kuchukua nafasi kwa mshiriki mwingine kulingana na utaratibu wa sampuli*).

TAARIFA YA IDHINI

- Mimi .... kwa hiari kukubali kushiriki katika utafiti huu
- Nimesoma fomu hii ya kibali au nilisoma habari.
- Nimekuwa na fursa ya kujadili utafiti huu wa utafiti na mtafiti na nimekuwa na maswali yangu yamejibu kwa lugha ambayo ninayoelewa.
- Hatari na faida zimeelezewa kwangu.
- Ninaelewa kwamba ushiriki wangu katika utafiti huu ni hiari na kwamba nipate kuchagua kuchukua wakati wowote. Ninakubali kwa hiari kushiriki katika utafiti huu wa utafiti.
- Ninaelewa kuwa jitihada zote zitafanywa ili kuweka habari kuhusu siri ya utambulisho wangu binafsi.

Saini ya mshiriki wa utafiti

Jina la mshiriki _____ Tarehe _____

Sahihi ya mshiriki _____

Sahihi ya mtafiti

Naamini mshiriki huyo anatoa ruhusa ya kushiriki katika utafiti huu

Watafiti Jina _____ Tarehe _____

Sahihi ya mtafiti _____

Saini ya Shahidi (Shahidi ni mtu anayekubaliana na mtafiti na mshiriki)

Jina la Shahidi _____ Tarehe _____

Sahihi / alama ya kidole cha gumba _____