

**ASSESSMENT OF EFFICIENCY OF THE MATERNITY REFERRAL
SYSTEM IN UASIN GISHU COUNTY, KENYA**

BY

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DECLARATION

Declaration by Candidate

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DEDICATION

I dedicate this work to my husband, Essajee, my sons Khaleel, Yaseen and Ali, and my parents, Khadija, Ali and Bismillah for their love and support during the development and execution of this work.

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I wish to acknowledge my supervisors Prof. Mabel Nangami and Dr. Alice Kaaria for their continued inputs and guidance throughout the thesis development.

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ABSTRACT

Introduction: Approximately 15 percent of all births globally are complicated by potentially fatal conditions requiring emergency care. In developing countries, high maternal and perinatal mortality and morbidity is mainly attributed to poor access to Emergency Obstetric and Neonatal Care (EmONC) services. This is partly due to the three delays - deciding to seek care, reaching the health facility and receiving adequate treatment - and the failure to bridge these delays with adequate referral interventions and systems. Uasin Gishu County (UGC) hosts a level 6 facility, Moi Teaching and Referral Hospital (MTRH) which conducts approximately 1200 deliveries monthly, receiving maternity referrals from 84 health facilities from UGC alone. The MTRH reported 30 maternal deaths in 2014. In order to achieve universal health access and coverage in reproductive health in UGC, it is vital to have a well- functioning maternity referral system. This study also incorporates the three delay model to analyze the three delays of accessing healthcare.

Objectives: To assess the efficiency of the maternity referral system in UGC as measured through the implementation of national referral guidelines; and delay factors in accessing maternal health services.

Methodology: This was a descriptive cross sectional study done between December 2016 and April 2017. The study was conducted at MTRH and ten public health facilities referring maternity patients to MTRH maternity which were selected using purposive sampling method. The study population was made up of in-charges or members of management teams of facilities, clinicians or nurses involved in the maternity referral process and referral-in forms from all the public health facilities within UGC. Stakeholder sampling was adopted for selecting two sets of key informants including the in charge, or a member of management team (in facilities where the in charge was absent), and a clinician or a nurse involved in the maternity referral process in each of the 11 selected facilities. Additionally, a census of 39 referral-in documents from the ten referring facilities were reviewed from the period between December 1st 2016 and April 31st 2017. The first set of key informants were interviewed using a Referral System Assessment (RSA) toolkit adopted from MEASURE evaluation. The second set of key informants were interviewed using an open ended questionnaire developed by the researcher. The referral-in documents were assessed using a document review checklist developed by the researcher based on the national guidelines on the minimum requirements of a referral document. The data collected were processed to provide descriptive statistics using SPSS statistics for Windows, version 23.

Results: All the eleven (11) facilities offered maternity referral services. Only 1 (9.1%) offered EmONC services. Sixty-four (64%) percent of the facilities fulfilled the staffing norms for reproductive services. Only 1 (9.1%) facility had documented maternity referral protocols. Only 3 (27.3%) facilities had training of providers on referral protocols. The most sought referral service was EmONC (81%). There did not exist standardized referral forms. Out of 39 referral- in documents assessed at MTRH, 10(26%) were official referral forms whose completeness varied between 50-70%. Referrals documented on Ante Natal Card, Mother Baby booklet, Plain paper and discharge summary were 16(41%), 8(21%), 4(10.3%) and 1(2.6%) respectively. All (11) facilities had no special register for documenting referrals back. The frequency of delays as reported by key informants include: Delay in reaching a health facility (43.75%), Delay in receiving care at facility (37.5%), Delay in deciding to seek care (12.5%) and No delay (6.25%).

Conclusion: The efficiency of the maternity referral system in UGC is less than optimal and the most common delay in accessing maternity health care in UGC is that of reaching the health facility.

Recommendations: Development of maternity referral guidelines, training of health personnel on maternity referral protocols, adoption of standardized referral forms and clear referral monitoring and evaluation framework.

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OPERATIONAL DEFINITION OF TERMS

- Ante partum:** Before childbirth
- Apgar score:** A measure of the physical condition of a newborn infant. It is obtained by adding points (2, 1, or 0) for heart rate, respiratory effort, muscle tone, response to stimulation, and skin coloration; a score of ten represents the best possible condition.
- Birth asphyxia:** A medical condition resulting from deprivation of oxygen to a newborn infant that lasts long enough during the birth process to cause physical harm, usually to the brain.
- Cesarean section:** A surgical operation for delivering a child by cutting through the wall of the mother's abdomen.
- Client movement:** A process that follows the issuance of a referral for a client to seek additional care from an organization, service, or community unit.
- Client parameters movement:** An indirect referral process used to move client information to seek supportive diagnosis and manage guidance to appropriate levels of the health system. This type of referral benefits from the scale-up of innovative information communication technology in health services, particularly in the context of e-health technology.
- Consultation:** A process a client or health provider uses to seek specialized services.
- Counter-referral:** A process used to redirect a referred client back to the originating unit for follow-up of the reason for referral.
- Emergency referrals:** A referral process used for emergency conditions that threaten life, limb, or eye sight.
- Expert:** A trained health care provider with expertise in a specific subject area.

- Expertise referral:** The system of rotation and facilitation of healthcare providers' movement to reach patients in need of care in situations where it may be more efficient and cost-effective to do so. Expertise referrals are used most commonly for non-emergency (scheduled) cases and include out-reaches.
- Fetal distress:** Refers to the presence of signs in a pregnant woman—before or during childbirth—that suggest that the **fetus** may not be well
- Fetal mal presentation:** Presentation of a part of a *fetus* other than the back of the head during parturition
- Inappropriate referrals:** Referrals that incorrectly designate destination or necessity or that lack quality of communication, completed referral forms, or accompanying documentation.
- Initiating facility:** An organization, service, or community unit that initiates a referral process by preparing an outward referral to communicate the client's condition and status; an initiating facility is also known as a "referring facility."
- Level of care:** The Kenyan health system is divided into levels of care, defined as community, primary care, and county and national referral services.
- Non-urgent or routine referral:** A referral process used to seek a second opinion, a higher level investigation, or for routine admissions and client management.
- Obstructed labor:** Is a condition when, even though the uterus is contracting normally, the baby does not exit the pelvis during childbirth due to being physically impeded.
- Palsy:** Paralysis, especially that which is accompanied by involuntary tremors.
- Post partum:** Following childbirth.

- Receiving facility:** An organization, service, or community unit that accepts a referred client or specimen from an initiating facility.
- Referral document:** Any document that the provider uses to document a referral and not necessarily a referral form
- Referral form:** The official referral forms from the referring facility
- Referral system:** A comprehensive health care system used to manage client health care needs by referring clients from an initiating facility to an organization, service, or community unit that can better provide the level of care needed.
- Referral system:** A comprehensive health care system used to manage client health care needs by referring clients from an initiating facility to an organization, service, or community unit that can better provide the level of care needed.
- Specimen movement:** A referral process used to move a specimen to another organization, service, or community unit for analysis.
- Tier of care:** The tiers of care in the Kenyan health systems are defined as community, primary care, county referral services, and national referral services.
- Transfer:** A management process used to move a client from one facility to another.
- Urgent referrals:** A referral process for conditions that may not threaten life, limb, or eyesight but require urgent attention to prevent them from becoming a serious risk to health.

ACRONYMS AND ABBREVIATIONS

BASICS	Basic Support for Institutionalizing Child Survival Project
CHC	Community Health Committee
CHEW	Community Health Extension Workers
CHW	Community Health Workers
CU	Community Units
EmONC	Emergency Maternal Obstetric and Neonatal Care
FGD	Focused Group Discussion
GHS	Ghana Health Services
IREC	Institutional Research and Ethics Committee
KII	Key Informant Interview
KNH	Kenyatta National Hospital
KNHCR	Kenya National Commission on Human Rights
KHSSP	Kenya Health Sector Strategic and Investment Plan
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MNH	Maternal and Newborn Health
MOH	Ministry of Health
MTRH	Moi Teaching and Referral Hospital

NACOSTI	National Commission for Science, Technology and Innovation
PHC	Primary Health Care
RSA	Referral System Assessment
RSAM	Referral System Assessment and Monitoring
RSM	Referral System Monitoring
RSPHS	Referral strategy and investment plan for Health Services
SDGs	Sustainable Development Goals
SMI	Safe Motherhood Initiative
UGC	Uasin Gishu County
UN	United Nations
UNFPA	United Nations Fund for Population Activities
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Emergency Fund
WHO	World Health Organisation

CHAPTER ONE

INTRODUCTION

1.1 Background

The function of referral is of particular importance in pregnancy and childbirth, as a range of potentially life-threatening complications require management and skills that are only available at higher levels of care (Daniels & Abuosi, 2020). High maternal and perinatal mortality and morbidity in developing countries is mainly attributed to poor access to Emergency Obstetric and Neonatal Care (EmONC) services. This is partly due to the three delays of accessing EmONC - deciding to seek care, reaching the health facility and receiving adequate treatment - and the failure to bridge these delays with adequate referral interventions and systems (Munjanja, et al., 2012). Additionally, it was revealed that the occurrence of any delay was associated with increasing severity of maternal outcome (Pacagnella et al., 2014).

The health care system refers to the institutions, people and resources involved in delivering health care to individuals. In order to achieve universal coverage a high level of health service output is required, i.e. access for all those in need to a core set of health interventions (the precise range of covered services or interventions will depend on the availability of resources in a country, as well as the local epidemiological context).

Guiding principles of a health system based on primary health care should;

- 1) Build on the Alma-Ata principles of equity, universal access, community participation, and intersectoral approaches;
- 2) Take account of broader population health issues, reflecting and reinforcing public health functions;
- 3) Create the conditions for effective provision of services to poor and excluded groups;
- 4) Organize integrated and seamless care, linking prevention, acute care and chronic care across all

components of the health system; 5) Continuously evaluate and strive to improve performance.

1.2 Efficiency of Referral System for Maternal Health Services

The Kenya Referral Strategy and Investment Plan for Health Services 2012–2017 (MOH, 2012) defines the referral system as “a mechanism to enable clients’ health needs be comprehensively managed using resources beyond those available where they access care.”

An efficient referral system is essential in providing access to emergency obstetric and neonatal care (EmONC). It is particularly important in pregnancy care and childbirth. A functioning referral system is generally considered to be a necessary element of successful Safe Motherhood programs. “Referral” of patients from basic to more sophisticated levels of care is considered to be an integral part of allopathic health systems (WHO & Unicef, 1978). Known determinants of the use of obstetric care at referral include distance, cost, perceived quality of obstetric care, health workers attitude and respect for women's social needs, perceived etiology of complications and socio-cultural preferences. Interventions to improve access and use of the referral system target different elements of the referral chain (Jahn & De Brouwere, 2000).

Murray and Pearson (Murray & Pearson, 2006) defines Elements of functional maternity referral system in developing countries as:

1. A referral strategy informed by the assessments of population needs and health system capabilities
2. Adequately resourced referral facilities
3. Active collaboration between referral levels and across sectors

4. Setting-specific protocols for the referring and receiving facilities
5. Accountability for provider's performance and supportive supervision to improve performance
6. Formalized communication and transport arrangements between referring facilities

1.3 Structure of Integrated Health Referral Network in Kenya

These are based on a four-tier system: community, primary care, primary referral and tertiary referral. Community services will focus on creating appropriate demand for services, while primary care and referral services will focus on responding to this demand. a) The community services comprise of all community based demand creation activities organized around the Comprehensive Community Strategy defined by the Health Sector; b) The primary care services will comprise all dispensaries, health centers and maternity homes of both public and private providers. Their capacity will be upgraded to ensure they can all provide appropriate demanded services; c) The county referral services include hospitals operating in, and managed by a given county. This is made up of all the former level 4 and level 5 hospitals in the county – government, and private. Together, all these hospitals in a given county form the County Referral System, with specific services shared amongst the existing County Referral facilities to form a virtual network of comprehensive services; d) The national referral services include the service units providing tertiary / highly specialized services including high level specialist medical care, laboratory support, blood product services, and research. The units include national level semi-autonomous agencies, and operate under a defined level of autonomy from the National Health Ministry, allowing for self-governance.

1.4 Moi Teaching and Referral Hospital

Moi Teaching and Referral Hospital (MTRH) is a tier 4 facility located in Uasin Gishu County (UGC). It is the second National referral hospital in Kenya after Kenyatta National Hospital (KNH). It serves a catchment area of 16.24 million from 18 out of 47 counties in Kenya. MTRH maternity conducts on average 1100 to 1200 deliveries monthly and receives maternity referrals from 84 health facilities within the county of Uasin Gishu. According to Uasin Gishu county health records, in 2014, there were 30 maternal deaths reported in UGC and all of which were recorded at MTRH. Furthermore, there were recorded 222 fresh still births in UGC in 2014 compared to 195 in 2013 (MOH, 2014).

1.5 Problem Statement

Approximately 15 percent of all births are complicated by a potentially fatal condition that requires emergency care (WHO, et al., 2012). The window of time to make emergency maternity referrals is small and if exceeded, debilitating and life threatening. In this small period of time, the components of the referral system that need to be tightly interlocked include clinical judgment, stabilization and transfer protocols, communications technology, transportation, and cost arrangements.

High maternal and perinatal mortality and morbidity in developing countries is mainly attributed to poor access to EmONC services. This is partly due to delays in deciding to seek care, reaching the health facility and receiving adequate treatment, and the failure to bridge these delays with adequate referral interventions and systems (Munjanja, et al., 2012). In Kenya, high maternal mortalities and inadequate maternal health have been perpetuated by weaknesses in the health system and inadequate referral systems. Consequences of such inadequacies include repeated maternal mortalities and morbidities e.g. ruptured uterus, Vesicovaginal fistulas, rectovaginal

fistulas and finally intrauterine fetal deaths and mentally handicapped children (MOH, 2013b). Pacagnella et al. (2014) revealed that the occurrence of any delay was associated with increasing severity of maternal outcome.

MTRH is one of the two National referral hospitals in Kenya, serving a catchment area of 16.24 million. Being the major referral center in Uasin Gishu County it accounts for 55% of all skilled deliveries within the County and receives an average of 72 maternity referrals per month from 84 facilities within the county alone (MOH, 2013a). Improving Maternal and Newborn Health remains one of the greatest challenges in health service provision in Kenya. Emergency referral for mothers and newborns faces a challenge at a different level, until now, emergency referral has been “under-documented, under-researched, and under-theorized (Benson et al., 2019). Despite many ongoing activities referral is still an emergent subfield of Maternal and Newborn Health that requires coordination and systematic investigation.

By identifying weaknesses in the current referral system in this major national referral center, contributing factors to maternal, neonatal mortalities and still births may be addressed, ultimately improving maternal and Neonatal health as well as achieving sustainable development goal 3 which seeks ensure healthy lives and promote well-being for all at all ages (UNGASS, 2015). This calls for further research in order to address the existing knowledge gap.

1.6 Research Questions

- i. How efficient is the current maternity referral system in public health facilities in Uasin Gishu County when compared to recommended national referral guidelines?

- ii. Which delay factors in accessing healthcare are associated with maternity referral system in public health facilities in Uasin Gishu County?

1.7 Broad objective

To assess the efficiency of maternity referral system in public health facilities in Uasin Gishu County in relation to the implementation of national referral guidelines and the delay factors in accessing maternal health services.

1.7.1 Specific objectives

The specific objectives of the study are:

- i. To assess the efficiency of the maternity referral system in public health facilities in Uasin Gishu County against national referral guidelines.
- ii. To determine the delay factors in accessing health care associated with efficiency of the maternity referral system in public health facilities in Uasin Gishu County.

1.8 Significance of the Study

The study aims to identify factors that influence the efficiency of maternity referral system and the 3 delay factors that are associated with the efficiency of the maternity referral system in the County. The successes and gaps identified in the current referral system will be used to inform policy makers on areas that require strengthening and prioritization. Additionally, the study provides information to health care providers on the status of referral guidelines implementation and the possible delay factors in the referral system in order to act upon and improve. The study also provides knowledge to scholars in the field of health systems management and acts as a baseline for further research in the area of referral system efficiency.

1.9 Scope and Limitations

This was a cross sectional study assessing the efficiency of the maternity referral system by examining the of implementation of national referral guidelines and the 3 delays related to health care. The study focused on public health facilities in UGC and was conducted between the period of December 1st 2016 to April 31st 2017.

The study realized the following limitations:

1. Assessment of delay factors was measured subjectively according to the health workers' opinions however data was collected from informants at various levels of health care to corroborate the information.
2. The health workers' strike during the data collection period prolonged data collection beyond expected predetermined period. However, the variables in question were not time dependent.
3. This study assessed the referral system within public health facilities, however a recommendation was made for future studies to assess the maternity referral system in both private and public facilities.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains literature from secondary sources on maternity referral system reviewed according to the specific objectives of the study.

2.2 The Health System in Kenya

The Kenyan health system is organized around six levels of care that fit into four tiers of care, based on the scope and complexity of the services offered (see Figure 1). At the first tier/level, the health system is organized in community units (CU) of about 100 households or 5,000 community members. The CU is run by community health workers (CHW), volunteers who are supervised by community health extension workers (CHEWs), who are employed by MOH. CHWs are mandated to identify illnesses at the household level, treat minor ailments, and initiate referrals to higher levels of the health system. CUs are governed by the Community Health Committee (CHC) that comprises community members, CHWs, CHEWs, and a link facility health care worker.

The second tier consists of primary care health facilities that have dispensaries (level II) and health centers (level III) run by nurses and clinical officers. Dispensaries can provide general outpatient services and antenatal monitoring, and also perform minor surgical procedures. A few dispensaries that have adequate infrastructure, staff and supplies also support and conduct deliveries. In addition to the services provided by the dispensaries, health centers provide basic inpatient services, including deliveries (MOH, 2013b).

The third tier consists of the county referral facilities, which include the former primary and secondary hospitals. These provide both outpatient and inpatient services. They are staffed with doctors, clinical officers, and nurses. Some secondary hospitals serve as training centers for clinical officers and nurses, while some provide internship opportunities for medical interns. The fourth tier, the national referral facilities that offer highly specialized care, is used for training and support research. Health facilities in the various tiers of care include government-owned facilities, faith-based organizations, and private health institutions. The government health system has the largest network of facilities and is the most used. The second largest network is faith-based health institutions, followed by private health care institutions based mainly in urban areas.

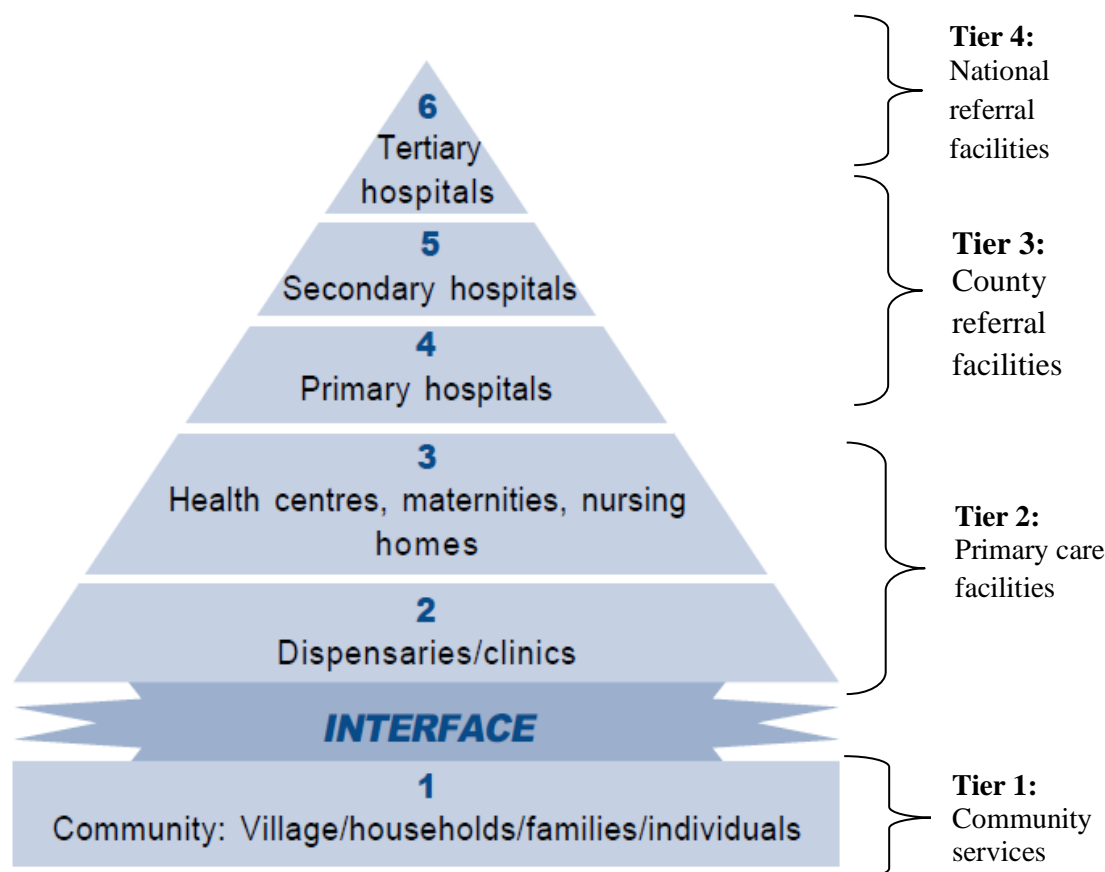


Figure 2.1: Kenya health care system depicting levels and tiers

2.3 Elements of a functional referral system

The elements of functional referral systems include (1) a referral strategy that is informed by the population needs and local context (for example, disease patterns in the population, cultural and ethnic diversity, economic capability, health-seeking behavior, and population expectations from the health system); (2) a strategy informed by health system capabilities; (3) referral centers that are adequately resourced according to agreed-upon service standards to meet referral demands; (4) systems that have active collaboration between referral levels and across sectors; (5) referring and receiving facilities with setting-specific protocols, which include guidelines on referral processes at both referring and receiving facilities; and (6) a unified referral records system. Other prerequisites to a functional referral system include accountability for provider's performance and supportive supervision to improve performance, formalized communication and transport arrangements between the referring and receiving facilities, pro-poor protection against costs of emergency referrals, capacity to monitor the effectiveness of the referral system, and government support of the referral system through the health policy (MOH, 2013b).

An effective referral system ensures a close relationship between all levels of the health system and helps to ensure people receive the best possible care closest to home. It also assists in making cost-effective use of hospitals and primary health care services (Adi, et al., 2013). Support to health centres and outreach services by experienced staff from the hospital or district health office helps build capacity and enhance access to better quality care. In many developing countries, a high proportion of clients seen at the outpatient clinics at secondary facilities could be appropriately looked after at primary health care centres at lower overall cost to the client and the health system. A good referral system can help to ensure:

- Clients receive optimal care at the appropriate level and not unnecessarily costly
- Hospital facilities are used optimally and cost-effectively
- Clients who most need specialist services can access them in a timely way
- Primary health services are well utilized and their reputation is enhanced

2.4 Referral Network in Kenya

The Kenya Health Policy 2012–2030 identified the need to strengthen the referral system in Kenya as a way of improving efficiency in the health system and improving patient outcomes. Referral systems strengthening is one of the seven priority areas under investment area one of service delivery systems. Some of the critical investment priorities for the referral system outlined in KHSSP 2012–2018 include (1) updated referral tools and guidelines at all levels, (2) orientation of the management teams on their referral roles and functions, and (3) tools for referral allowances for expertise movement and fuel for travel. A referral strategy was developed in 2012 to operate the referral systems and guide the strengthening of linkages across the tiers of care for efficient health service delivery (MOH, 2013a).

The Ministry of Health (2013b) defines the referral system as “a mechanism to enable clients health needs be comprehensively managed using resources beyond those available where they access care.”

The strategy classifies referrals in four categories that include: client movement, service or expertise movement, specimen movement and client parameter movement. For the referral system to be functional, it needs to operate in a functional health system (MOH, 2012).

To achieve their goals, all health systems have to carry out some basic functions, regardless of how they are organized: they have to provide services; develop health workers and other key resources; mobilize and allocate finances, and ensure health system leadership and governance (WHO, 2007).

2.5 The Referral Services Framework

The term referral is used in different ways: For instance, it is used to indicate the advice of a health worker to attend a higher-level health unit, whether followed or not. Thus referrals in pregnancy and childbirth can be classified as (1) institutional or self-referral, depending on the involvement of first line services; (2) antenatal, delivery or postnatal referral; and (3) elective or emergency referral (Jahn & De Brouwere, 2000).

In Kenya referral services framework provides for movement of four categories of elements (1) Client movement where client or next of kin seeks an appropriate level of care where his/her or next of kin's health needs can be addressed in the most efficient and cost-effective way (2) Expertise movement where services that might not otherwise be available are offered to communities that need them, as they need them. Rather than moving clients to different levels of facilities, specialized service providers come to the client. Services can be provided in a number of ways, such as directly to clients, as out-reach, screening in a medical camp, or surgeries in remote areas. The movement of expert professionals is from higher levels to lower levels.(3) Specimen movement where laboratory specimens are moved to specialized facilities, usually for diagnostic purposes and (4) Client parameter movement client information can be sent to appropriate levels of the health system for supportive diagnosis or management guidance (MOH, 2014).

According to the MOH (2014), general and client referral guidelines include but not limited to; Complete and accurate client referral form accompanied by all relevant diagnostic results; Referral processes governed by referral guidelines/protocols; Monitoring and evaluation of referral system performance; Availability of health services according to the health sector norms and standards; Emergency referrals shall be accompanied by trained staff; Proper documentation, and client privacy and confidentiality; Counter-referral communication; and Adequate ambulance service.

Linking the different levels of care was an essential element of primary health care (PHC) from the very beginning. The referral system was meant to complement the PHC principle of treating patients as close to their homes as possible at the lowest level of care with the needed expertise (Jahn, 2001). As emphasized by the (WHO, 1994), this back-up function of referral is of particular importance in pregnancy and childbirth, as a range of potentially life-threatening complications require management and skills that are only available at higher levels of care. The following levels of care have been identified: (1) family/community, (2) health centre and (3) district hospital (WHO, 1996).

The first referral level is defined as district or sub-district hospital, to which a woman at high risk is referred prenatally or sent for emergency obstetric care, and where the following essential services should be available: (1) surgical obstetrics, (2) anesthesia, (3) medical treatment, (4) blood replacement, (5) manual procedures and monitoring labour, (6) management of women at high risk, (7) family planning support and (8) neonatal special care

Self-referral for delivery is often without specific medical reason while institutional referral is mostly occurs in cases of emergency of when a facility does not have the

capability of dealing with the situation at hand. The following diagram illustrates Referral linkages between different levels of care.

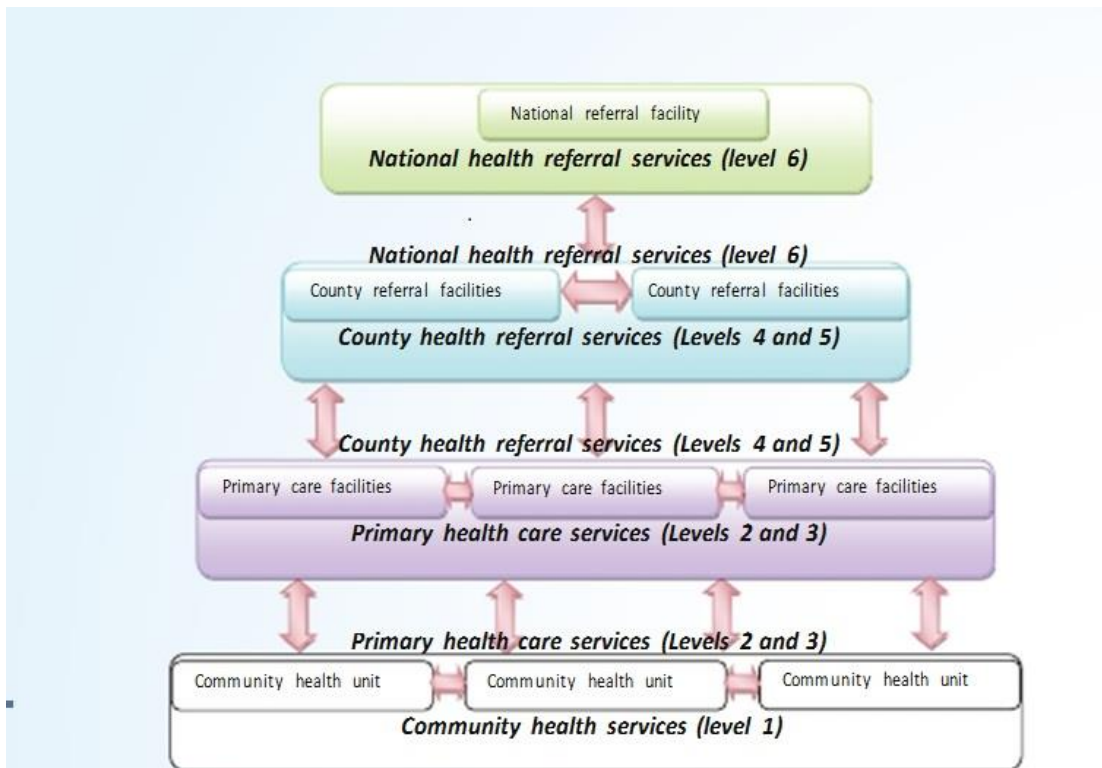


Figure 2.2: Referral linkages between different levels of care

Source: Kenya Health Sector Referral Implementation Guidelines 2014 1st Edition

2.5.1 Reasons for Urgent Maternity Referral

Problems of geographical and financial accessibility are well documented reasons for abstaining from or delaying obstetric referral (Thaddeus & Maine, 1994). Consultation between primary health care and secondary care specialists is an important feature of modern health delivery. Maternal care is no exception to this, and referral for a second opinion and/or follow up at the hospital at the appropriate time is an important antenatal care procedure. Early identification of high risk factors during pregnancy with appropriate referral will reduce both maternal and perinatal mortality the following are some of the reasons for urgent maternity referral

Fetal distress, Maternal distress, obstructed labor, prolonged labor, Fetal mal presentations, Severe birth asphyxia of the new born, Multiple gestation (Twin or triplet pregnancies) and Post-partum and ante partum hemorrhage

2.5.2 Factors related referral pathways for maternity services

Knowledge of the referral system by health providers and health users plays a very important role in compliance and effectiveness of referral systems, and so does geographical access to care. Various factors influence efficiency of referral pathways and in/appropriate use of maternity care services. These are categorized as patient-related factors, health systems related factors, and health professional related factors (Mthethwa, 2009).

2.5.2.1 Patients related factors

Patients play an important role in the choice of their delivery site. However, levels of care and referral pathways have been developed to ensure appropriate use of health facilities, so patients are required to attend defined facilities factors such as poor understanding of the referral system and lack of confidence in the ability of health providers to manage complications also contribute to patients' by-passing lower levels of care. This may lead to over-utilization of a maternity unit thus affecting the quality of patient care that may result in maternal and perinatal mortality, client dissatisfaction, litigations and bad image of the hospital (Mashishi, 2010).

Sometimes non-compliance with referral guidelines is observed as patients refusing to go to a higher level of care when referred by a health provider. Patients' own perception or lack of understanding of the reason for referral is an important factor (Majoko, et al., 2005). A study to monitor the effectiveness of the maternal referral system in Rufiji district, Tanzania shows that only just over a third of women referred

from primary health care facilities complied with referral advice and the majority of women (63%) did not comply because they did not perceive demographic risk factors such as young age (less 20years), grand multipara and primigravida as serious (Pembe et al., 2010).

2.5.2.2 Health systems related factors

The severe shortage of health providers, especially doctors at primary care level facilities; lack of material resources at primary care level; and lack of infrastructure are important factors that contribute to inefficient referral systems. One referral center might be a hub for receiving multiple referrals regardless of the capacity it can handle.

Kamau, et al. (2017) sought to establish challenges facing implementation of the referral system for quality health care services in Kiambu County, Kenya. The study revealed that infrastructure, health information systems, capacity of health care workers, and financial resources are challenges in implementation of health care referral system in Kiambu County and should be strengthened.

A baseline assessment by MOH (2013b) in eight counties in Kenya identified various gaps within the referral system including: lack of clear guidelines; inadequately resourced facilities; lack of formal communication and transport mechanisms; poor relationships between referring and receiving facilities; lack of pro-poor protection mechanisms for emergency referrals; inadequate capacity to monitor the referral system and provide feedback; and inaccurately reported referral data. The study concluded that the health referral system in Kenya was less than optimal and the system required strengthening immediately.

2.5.2.3 Health profession factors

Health workers' poor understanding of referral systems and guidelines may also lead to non-referral of high risk patients to higher levels of care. For example, Majoko *et al.* (2005) show that health providers in Zimbabwe sometimes fail to refer women with high risk pregnancies to the next level of care: a total of 1077 multiparous women had previous pregnancy complications and were eligible for referral but only 41% were referred (Majoko *et al.*, 2005). The researchers concluded that the nurse/midwife should be involved when reviewing the indications for antenatal referrals as this may prevent a disregard of some of the referral indications (Majoko *et al.*, 2005). Appropriate referrals are dependent on the willingness of health professionals at referring facilities to abide with the referral system and availability of resources at receiving facilities (Pasquier *et al.*, 2005).

Referral pathways can support decentralized service provision if health services capacity is improved and essential resources are made available. For example, a study in Malawi shows that a well-equipped district hospital, availability of functional ambulances and availability of functional short-wave radio linking all health centers and district hospitals improved the ability of the district referral system to handle obstetric emergencies in a country with limited resources (Kongnyuy, Mlava, & Van Den Broek, 2008).

2.6 The Three Delay Model

While EmONC services are necessary if maternal mortality is to be reduced, they may not be sufficient. Even when services are functioning well, women with obstetric complications face a variety of barriers to using them. Some of these barriers are economic e.g., lack of money to pay for transport or services. Some of these barriers are cultural e.g., the low value placed on women's lives. Some are geographic e.g.,

long distances and poor roads. Anything that causes delay in getting treatment may cost women their lives (Thaddeus & Maine, 1994). While there are many factors that can cause delay, they can be grouped using a simple model called The 3 Delays. The model specifies the three types of delay that contribute to the likelihood of maternal death:

- (1) Delay in deciding to seek care;
- (2) Delay in reaching a treatment facility; and
- (3) Delay in receiving adequate treatment at the facility

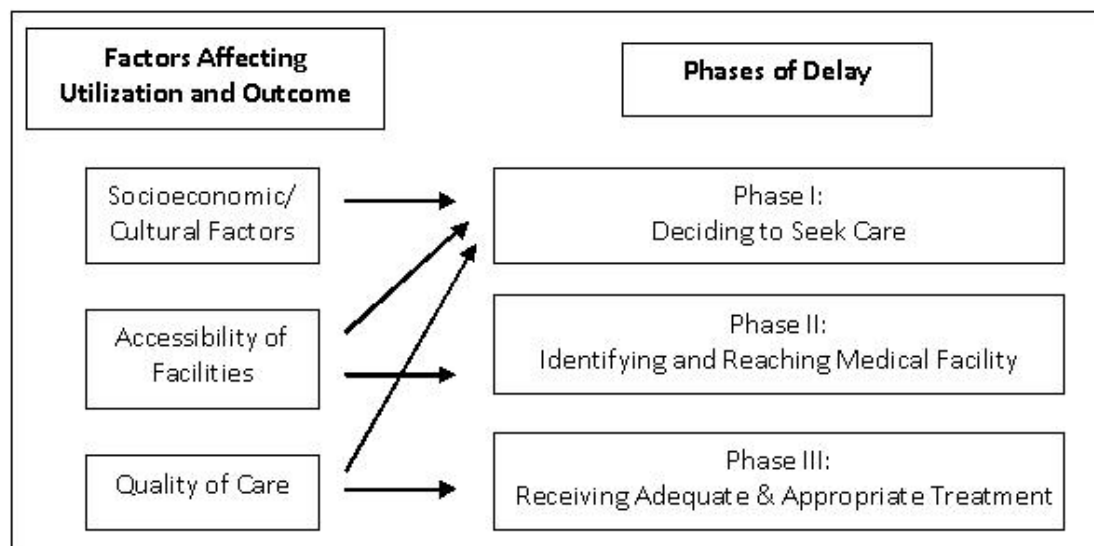


Figure 2.3: Delay Model

Source: Too far to walk: maternal mortality in context. (S. Thaddeus & D. Maine, 1994)

Barnes-Josiah et al. (1998) used the three delays framework to analyze a sample of 12 maternal deaths that occurred in a longitudinal cohort of pregnant Haitian women. From the findings, a delayed decision to see medical care was noted in eight of the 12 cases, whereas delays in transportation only appeared to be significant in two. Inadequate care at a medical facility was a factor in seven cases. Multiple delays were

relevant in the deaths of three women. The study suggested that a lack of confidence in available medical options was a crucial factor in delayed or never made decisions to seek care. The study indicated that expanding the coverage of existing referral networks, improving community recognition of obstetric emergencies, and improving the ability of existing medical institutions to deliver quality obstetric care, were all necessary.

Echoka *et al.* (2014) conducted a facility-based qualitative study among 30 women in Malindi district. The study revealed that first and second delays contributed to ineffective treatment on arrival at the health facility. In the study, they established that delays in deciding to seek care when obstetric complications occur, combined with those delays in reaching the hospital, contribute to ineffective treatment upon arrival at the health facility.

2.6.1 Delay 1: Deciding to seek care

The decision to seek care is the first step that must occur if a woman with a complication is to receive EmONC. This decision may be influenced by many factors. First of all, there is the ability of the woman and her family or attendants to recognize a life-threatening complication. They must also know where to go for help. Medical personnel often assume that lack of information in the community is a major obstacle to treatment. In a given situation, this may or may not be true. It may be that people know when help is needed but choose not to go to the hospital because they know that it lacks a physician with obstetric skills. Cultural factors can play an important role in the decision to seek care. The distance to the health facility, availability and efficiency of transportation, and cost of health care and transportation all influence people's readiness to seek care. In addition, the reputation of the facility can play a key role.

People may not seek medical help promptly or at all if they believe the services to be of poor quality.

2.6.2 Delay 2: Reaching a medical facility

Once the decision to seek care has been made, the woman must reach a facility where EmONC is available. Accessibility of health facilities will thus influence delay at this stage. Accessibility is a function of distance from the health facility, availability and efficiency of transportation, and cost. Accessibility is also a function of the services offered at various levels of the health system. For example, the distance to a functioning EmONC facility is increased if personnel at nearby health centers cannot offer even basic EmONC services.

2.6.3 Delay 3: Receiving treatment

It is important to remember that many women die in hospitals, having overcome barriers in Phases 1 and 2. The provision of emergency obstetric care is dependent on a number of factors, including number and training of staff, availability of drugs and supplies, and the general condition of the facility. In addition, there is the crucial element of management. A facility can have all the staff and supplies required, and yet provide very poor care. This is important to remember in evaluating performance. For example, a checklist of supplies and equipment does not tell you if care is actually being provided or how long it takes.

2.7 The Safe Motherhood Initiative (SMI) in Kenya

The Safe Motherhood Initiative (SMI) was launched in 1987 in Nairobi as a global movement and an international effort to reduce the burden of maternal death and ill-health in developing countries. When health, development and policy experts gathered in Nairobi to inaugurate the initiative, maternal mortality was not a priority in the world. It was an

overlooked “M in MCH” of maternal-child health (MCH) programs (Rosenfield & Maine, 1985). Over the years maternal mortality became an international priority among governments, donors, UN agencies, and stakeholders. Safe motherhood aims to promote antenatal care, delivery at health facilities and the treatment or referral of high risk or symptomatic mothers and babies. Safe motherhood includes basic newborn resuscitation, avoidance of hypothermia, improvements in perinatal hygiene, early breast-feeding and protecting maternal-infant bonding. Many traditional birth attendants have been given midwifery training as part of the Safe Motherhood strategy.

However, despite the achievements, the Safe Motherhood Initiative has fallen short of the goal that it *set almost 20 years ago*: to reduce maternal mortality by 50% by the year 2000. Some training programs, especially for traditional birth attendants, appear to have had little impact on maternal mortality (Walraven & Weeks, 1999). In some countries, mortality levels have worsened.

Several factors have been cited as contributing to the high mortalities in developing countries. There has been a significant decline in the quality of health care delivery nationally. This has been documented in many studies, surveys, and assessments conducted nationally or within health institutions (UNFPA, 2013). Many health facilities have no qualified staff and essential services such as deliveries are conducted by unqualified staff. Physicians training overseas have not returned home for economic reasons (Adhikari & Grigulis, 2013). Improvements to the service-delivery of maternal health-care need to stem from grass root demand, thus the importance of a community health strategy. This is discussed next.

2.8 Theoretical Framework

World Health Organization (WHO) identifies 5 components of a referral system that include:

- Health System
- Initiating facility
- Referral practicalities
- Receiving Facility
- Supervision and capacity building

Following a study of the referral steps in district health systems that was conducted in South Africa, a conclusion was drawn that enough evidence is provided of an ineffective referral system in district hospitals in South Africa (Mojaki, et al., 2011).

A study conducted in Kenya by the Ministry of health in October 2013 in 8 out of 47 counties in Kenya acknowledged the 9 elements of a well-functioning referral system, and following an assessment based on those elements, a conclusion was made, that health referral system in Kenya is less than optimal and the system needs to be strengthened immediately (MOH, 2014).

Referral system assessment and monitoring(RSAM) Toolkit was developed by Svetlana Negroustoueva and Cristina de la Torre, with support from Ani Hyslop (MEASURE EVALUATION, 2013) The same tool kit was used to assess the efficiency of the referral system in a study conducted in Kenya by the ministry of health in 2013 The referral system assessment involves two parts:

1. Interviewing key service providers involved in the referral system

2. Reviewing relevant documents i.e. Referral system assessment instrument and Document checklist

It is from these studies that the theoretical framework of this study is based on.

2.9 Summary of Literature Linking Efficiency of Referral System To 3-Delays

Universal access to and provision of quality emergency obstetric with newborn care (EmONC) services is one strategy for reduction of maternal and newborn mortality (WHO, 2005b). Maternal mortality in resource-poor nations has been attributed to the 3 delays: delay in deciding to seek care, delay in reaching care in time, and delay in receiving adequate treatment (Maine *et al.*, 1997; Nawal, 2008)

The first delay is on the part of the mother, family, or community to seek care. The second delay is in reaching a health care facility, and may be due to road conditions, lack of transportation, or far geographical locations. The first two delays can be classified as demand side barriers. The third delay occurs at the health care facility. This is a supply side barrier because, upon arrival at the hospital, women receive inadequate care or inefficient treatment.

Failure to seek care, the first delay, can be due to failure to recognize danger signals or due to failure to take a decision to seek care. This study will adopt the 3 delay model.

The regions with the highest maternal mortality in sub-Saharan Africa and Southern Asia are the same ones with the lowest coverage of births by skilled personnel. In these regions, coverage of deliveries at birth is uniformly less than half. Realization of universal health access is far from complete (Obare *et al.*, 2010). Even by 2015,

improving maternal and newborn care remains a key strategy in the post-2015 manifesto (Langer, et al., 2013).

Linking the different levels of care is an essential element of primary health care (PHC) from the very beginning. In most countries full implementation of national referral guidelines would result in 30% to more than 50% of all pregnant women being referred either antenatal or for delivery.

Deciding to Seek Care

A patient's lack of knowledge of MNH keeps her from complying with referral advice providers attributed referral non-compliance due to patient misunderstanding, which patients' responses also confirmed Women's lack of knowledge about their health and the potential or actual health threat is not uncommon (Bossyns & Van Lerberghe, 2004). Oftentimes the most influential source of knowledge in regards to health comes from prevailing cultural beliefs. Cultural and traditional beliefs educate women in a way that can keep them from complying with medical advice and MNH referrals (Bari *et al.*, 2006). A traditional Armenian belief is to keep the newborn inside the house for the first 40 days of life to protect the baby from the "bad eye". Opposition to this traditional belief, modern medicine suggests that the newborn needs fresh air and sunlight from the first days of his/her life for proper development and growth. Therefore, such dangerous traditions and beliefs need to be addressed properly through educating families and communities in order to improve overall MCH.

Project NOVA's baseline assessment in five southern Armenian districts revealed further gaps in women's MCH knowledge (NOVA, 2007). Results showed that the vast majority of women residing in rural areas were not aware of the pregnancy, postpartum, newborn and infant danger signs, which require immediate intervention

by a healthcare provider. On average women were able to report only one postpartum-related and one child care-related danger sign demonstrating the clear need for more comprehensive education and prevention activities in Armenia.

The international experience revealed three different approaches for educating the community on MNH and or the appropriate use of the local referral system. These approaches focused either on provider training, community education, or in one example, the health center through the use of a health communication campaign. The most common approach to education and prevention activities was directed at healthcare providers who then educated the community (Bari *et al.*, 2006).

Reaching Care

1. Transportation

Numerous studies list prohibitive transportation costs, lack of transport, no community support for finding transportation and poor road conditions as key barriers to referral (Ahluwalia, et al., 2003; Bossyns & Van Lerberghe, 2004) Such barriers also exist for many settings. While much of the international experience on referrals mentions the need for a functioning transportation scheme, there are very few examples of successful approaches.

In general, transportation systems have the best chance of success where the community is involved in the creation and management of the system. While a system that utilizes local transportation is more accessible, rather than an ambulance located at the referral facility, the research shows that when a health provider accompanies the patient, the patient has a better chance for a positive outcome.

2. Expenditures

Family expenses related to the cost of transportation, medical care, food and accommodations for accompanying family members prohibit patients from complying with referrals (BASICS II and the GHS, 2003) Approaches taken to make referral systems more financially affordable either focus on reducing the costs of healthcare services and transportation or on setting up community-managed loan or insurance schemes. Initiatives aimed at subsidizing the cost of referral transport and health services realized marginal success only through the synergism with other initiatives to improve health services but were not enough to encourage referral compliance on their own (Majoko *et al.*, 2005).

Receiving Proper Care

Receiving proper care in general and overall emergency preparedness for MNH in particular, relates directly to issues of access and quality, encompassing multiple factors at the family/community and service delivery levels, such as:

- Ensuring the continuum of care at all levels;
- Maintaining the physical infrastructure through provision of medications, equipment and supplies, and renovating healthcare facilities;
- Training of healthcare providers in proper identification and management of danger signs and life-saving emergency interventions using internationally recognized and nationally accepted evidence-based approaches and practices; and
- The availability of a two-way functional communication system and timely transportation of emergency patients to the proper healthcare facilities.

1. Continuity of care

Lack of communication between referral facilities, mainly in regards to the lack of referral and counter referral forms. The lack of coordination can partially be attributed to the poor record keeping system for referrals. In some cases, a skeleton system may be in place but no guidelines exist to tell the provider how to use it. Recordkeeping provides data on referral patterns, coordinates care between providers, and offers learning opportunities for the referring provider if used as a feedback mechanism. Records are also helpful to the referred patient because they document their health history and reason for referral leaving less room for patient error in recounting their information to referral facility providers (Biem, Hadjistavropoulos, Morgan, & Pong, 2003).

2. Equipment and renovations

Renovating facilities, supplying them with the proper equipment and maintaining a steady drug supply is part of an integrated approach (Kerber *et al.*, 2007). Many referrals can be made only after referral facilities were renovated and/or upgrading referral facilities is an important complementary intervention to improve the referral system.

3. Provider training and supervision

The need for continuous education of practicing healthcare workers to improve skills, knowledge, and behavior towards patients could not be emphasized enough. In-service training of rural healthcare workers in the recognition of maternal and neonatal health danger signs, referrals and interpersonal communication skills coupled with a sensitivity training for healthcare providers at the referral hospital has proven to be an effective intervention. These multifaceted training events demonstrated

significant increases in the number of timely referrals with subsequent reduction of stillbirths, perinatal and maternal deaths. In addition to clinical and intrapersonal skills training, the research demonstrates that providers also need to understand the proper use and importance of the referral system and its terminology.

4. Supportive Political Environment and Framework

An element critical to an effective, functional MNH referral system is national and local level policy and political support. National and local policies are different for different countries; however, international experience (Murray & Pearson, 2006) recommends focusing on the development and availability of:

- Operational guidelines including a unified records' system, description of when and where a provider should refer, healthcare worker training and monitoring, and referral-receiving facility protocols;
- Standards of care and protocols for the management of normal and abnormal obstetric and neonatal conditions at all levels of the referral system;
- Provider performance targets, annual or semi-annual review sessions; and
- Monitoring and evaluation system.

In addition, there is a need for a mechanism to routinely update standards of care, medical service delivery guidelines and protocols as necessary. It is critical that stakeholders from the different levels are involved in policy formation and that transparency is maintained throughout the process.

2.10 The Conceptual Framework

Health systems and communities, being social systems and acting as inputs, interact with processes of delays and barriers to create equilibrium that impacts outputs and outcomes. The best way to measure the success of health programs is to measure their impact on the outcome of interest. In the field of maternal mortality, "impact"

indicators include maternal mortality rates and ratios, and the lifetime risk of maternal death. An alternative approach is to use "process" and Output indicators. These are designed to measure changes in the steps leading up to the desired outcome. In general, Processes refer to program activities and Outputs refer to the results of these activities. Outputs are really just intermediate program results that lie between program activities and the desired outcome of the program. The objective is to make inferences about program success by measuring changes in the process and output indicators (Thaddeus & Maine, 1994).

These are summarized in the conceptual framework below.

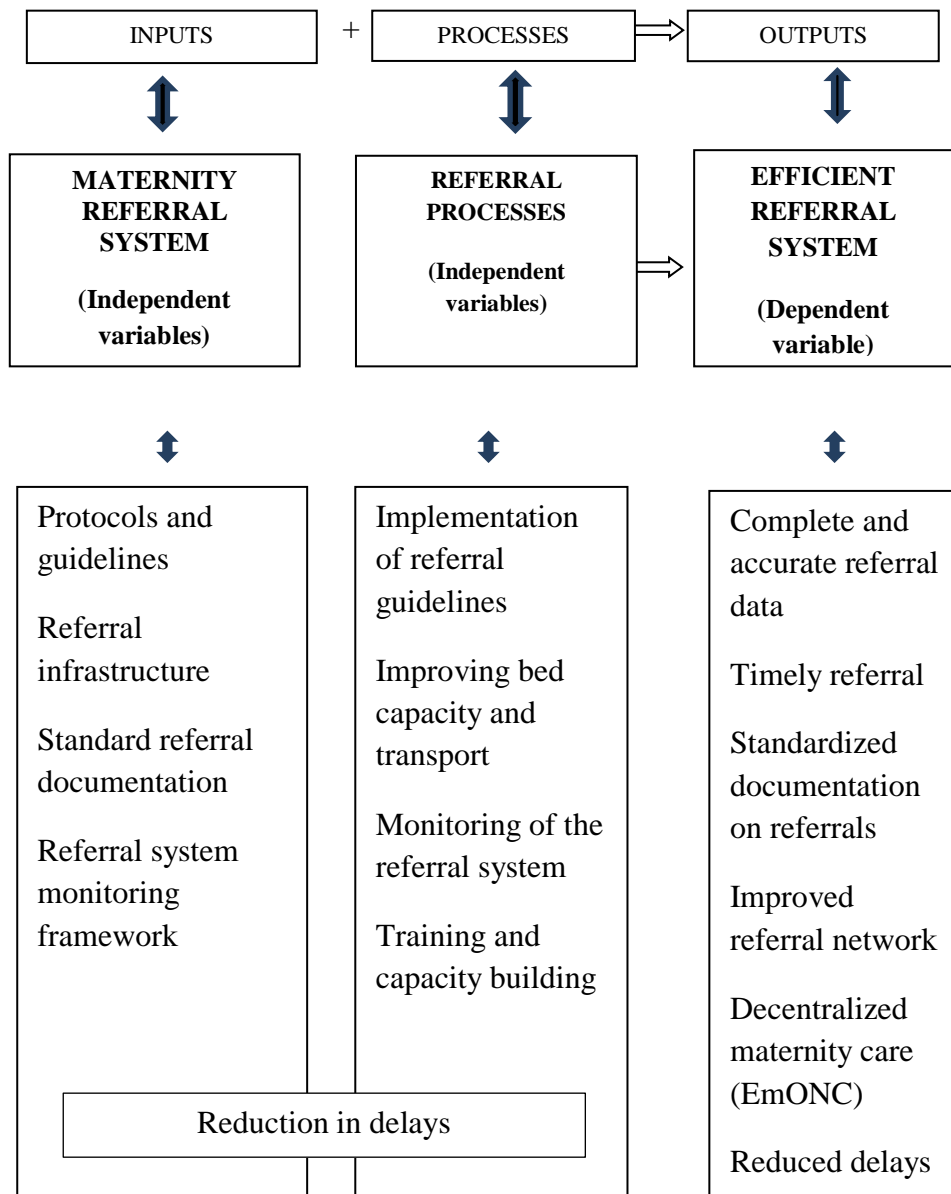


Figure 2.4: Conceptual Framework

Source: Modified from the systems approach model

DEPENDENT VARIABLE	MEASUREMENT
EFFICIENCY of health referral system	<ol style="list-style-type: none"> 1. Complete and accurate referral data 2. Timely referral 3. Standardized documentation on referrals 4. Improved referral network 5. Decentralized maternity care (EmONC)
INDEPENDENT VARIABLES	MEASUREMENT
National referral and implementation Guidelines	<ol style="list-style-type: none"> 1. Protocols and guidelines 2. Referral infrastructure 3. Standard referral documentation 4. Referral system monitoring framework
Delay factors	<ol style="list-style-type: none"> 5. Delay in deciding to seek health care 6. Delay in reaching a health facility 7. Delay in receiving appropriate treatment at the facility

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter details information on the study design, the study area, the target population, the sampling procedure, methods of data collection and analysis, and the ethical considerations for the study.

3.2 Research Design

The study employed a descriptive cross sectional design to assess and analyze the maternity referral system in Uasin Gishu County. The design allowed for the measurement of the study variables within a predetermined period of time.

3.3 Study Area

The study was carried out at Moi Teaching and Referral hospital which is the major receiving facility and top 10 referring facilities to MTRH within Uasin Gishu County. Moi Teaching and Referral Hospital is the second National referral hospital in Kenya and serves as a referral facility for western Kenya, some parts of eastern Uganda, South Sudan and Tanzania. It has a catchment population of approximately 16.24million (KNBS, 2010). There are approximately 1100 to 1200 deliveries conducted monthly. The hospital also serves as a teaching facilities for medical undergraduate and post graduate students

3.4 Target Population

In charges of facilities or members of management teams, and clinicians or nurses involved in the maternity referral process from the 84 receiving and referring public health facilities including referral documentation from referring facilities within UGC.

These are part of the major stakeholders in the administration and implementation in matters of maternity referral system.

3.5 Study Population

The study focused on MTRH as the major receiving facility and 10 referring and receiving public health facilities within UGC, namely; Huruma Sub County hospital, Uasin Gishu County Hospital, Ziwa Sub County hospital, Burnt Forest Health Centre, Chepkigen Dispensary, West Health Centre, Turbo Health Centre, Langas Health Centre, Kabyemit Dispensary and Chepkanga Health Centre. The 10 facilities were selected purposively because they accounted for the bulk (87%) of maternity referrals to MTHR within UGC. The study population was made up of in charges of facilities or members of management teams whose responsibility is to avail referral protocols and guidelines and oversee implementation of maternity referral services using these guidelines. The study population also included clinicians or nurses involved in the maternity referral process who are responsible for delivery of maternity referral services. Finally, referral-in forms from all the public health facilities within UGC were also assessed in the selected facilities.

3.6 Eligibility Criteria

3.6.1 Inclusion Criteria

Hospital Staff:

- i. Had to be an in charge of the facility or a member of the management team, and a clinician or nurse involved in the maternity referral process at the Moi Teaching and Referral Hospital and/or at the selected referring facilities.
- ii. Had to be a registered employee of the study facility.

3.6.2 Exclusion criteria

Hospital staff:

- i. An in charge of the facility or a member of the management team, and a clinician or nurse at the Moi Teaching and Referral Hospital and/or at the selected referring facilities who had been employed for less than six months during data collection period.
- ii. A member of the health management team at MTRH involved in the pilot study as a key informant.

3.7 Sample Size

The study selected MTRH being the major receiving facility in UGC and 10 public health facilities within UGC which accounted for 87% of maternity referrals to MTRH. The 11 facilities were sampled from tier 2 to 4 as follows: Six (6) facilities in tier 2, four (4) facilities in tier 3 and one (1) facility in tier 4. The in charge, or a member of management team (in facilities where the in charge was absent), in each of the 11 selected facilities constituted the sample for the first set of Key Informant Interviews (KII). The second set of KII included a clinician or a nurse involved in the maternity referral process from the 11 study facilities.

A census of 39 referral-in documents from the top ten referring facilities was conducted from the period between December 1st 2016 to April 31st 2017. This is because records from MTRH referral-in register indicated that for the period of March 2016 to September 2016 there were a total of 72 referrals (average of 12 referrals per month) from the top 10 referring facilities within Uasin Gishu County. Given the small number of referrals over the 6-month period, all referral-in forms from those facilities were assessed over the predetermined study period.

3.8 Sampling Procedure

The referring facilities to be studied were sampled using purposive sampling technique; MTRH as the major receiving facility in UGC and the top ten facilities in UGC that accounted for the highest number (87%) of maternity referrals to MTRH. Stakeholder sampling was adopted for selecting two sets of key informants who comprised of in charges of facilities or members of management teams, and clinicians or nurses involved in the maternity referral process. In each of the study facilities either an in charge or a member of the management team was selected to respond to the quantitative tool, while a clinician or nurse involved in the maternity referral process was selected to respond to the qualitative tool. Finally, all referral-in documents were assessed as they came in during the predetermined study period.

3.9 Data Collection Tools and Procedures

3.9.1 Data Collection Tools

3.9.1.1 Quantitative tools

Primary quantitative data were collected using parts of the Referral System Assessment (RSA) toolkit (appendix I) that was adopted from MEASURE evaluation 2013 and a document review checklist (appendix III) which was used to assess the referral-in documents. The purpose of these tools was to address the first specific study objective.

Referral System Assessment (RSA) is conducted to obtain an in-depth examination of how well referral processes and mechanisms are functioning at a given point in time. It examines how the referral system is structured, how networks are formed, whether appropriate written referral protocols and guidelines exist, the processes providers follow to refer and counter-refer clients, how well referrals are tracked and followed up, and barriers to referral initiation and referral completion. The assessment can also

be used to evaluate interventions when applied repeatedly. The RSA toolkit was administered to the facility in charge or a member of the management team in each of the selected facility.

The document review checklist was developed by the researcher based on the national guidelines on the minimum requirements of a referral document. The checklist comprised of 14 essential parameters necessary in any referral document. The checklist was used to assess the referral-in documents from all the referring public health facilities in UGC. The checklist was used to generate information on accuracy and completeness of the referral-in documents assessed.

3.9.1.2 Qualitative tools

Open ended questionnaires (appendix II) and a voice recorder was used to record qualitative data. The purpose of this tool was to address the two specific study objectives. The questionnaire was researcher developed and interviewer administered to capture frontline maternity staffs' opinion and knowledge on the maternity referral system as compared to the managements'.

3.9.2 Data collection procedures

Data were collected from 11 selected health facilities within Uasin Gishu County. In all 11 facilities, a referral system assessment tool was applied to the available and respective facility In- charges. Key Informant interviews were conducted using an open ended interviewer administered questionnaires to health workers involved in the maternity referral process in each of the 11 facilities. Referral-in forms were assessed at the receiving facility and compared against the recommended national referral guidelines.

3.9.3 Pilot study

A pilot study was carried out at Moi Teaching and Referral Hospital as a receiving facility for referrals from Mosoriot subcounty hospital as a trial run to clarify the feasibility, validity and reliability of the objective of the study. Key informant interviews were conducted in Mosoriot Sub County Hospital, while referral in forms at MTRH were checked against recommended national guidelines. It tested whether the research procedures, data collection tools, statistical and analytic processes could yield consistent information needed to answer the research questions of the study. It checked to clarify unclear or culturally sensitive questions that may have needed to be changed before the main study. The pilot study also checked whether the investigator and research assistants were sufficiently skilled in the study procedures. It was carried out at a different time to make corrections before the study was implemented.

3.10 Methods of Data Analysis

3.10.1 Quantitative data analysis

Quantitative data from the RSA questionnaire, and document review checklist, were checked, coded and entered into excel worksheet and exported to SPSS computer software. Descriptive analysis was conducted using frequency, percentages and ranges to summarize data on the referral processes and documentations at the selected public health facilities. Efficiency of referral system was measured by comparing the effectiveness of referral systems at MTRH and other referring facilities against the stipulated guidelines by the Ministry of health. Data were presented using tables and figures such as pie charts and bar graphs.

3.10.2 Qualitative data analysis

The qualitative data for this study consisted of text obtained from transcripts of audio recordings and field notes from Key Informant Interviews. Text were coded and

categorized according to common themes within the health referral system. This analysis, therefore, was thematic. Data correlations, corroboration and interpretation was done to create meanings and a final report made. Data correlations were established through the process of constant comparative analysis of incidents, concepts according to focus. Data corroboration was indicated by replicated responses from two separate data sets that were analysed simultaneously. Meanings were analyzed through conceptualization, articulation of concepts through description and classification, and analysis of relationships through the connections established between them.

3.11 Ethical Considerations

Permits: Ethical approval (appendix V) to conduct the study was sought from the Institutional Research Ethics Committee (IREC) at the Moi Teaching and Referral Hospital/ Moi University School of Medicine on behalf of the National Commission of Science, Technology and Innovations (NACOSTI).

Consent: Voluntary and informed consent (appendix IV) was obtained from all the study participants. Only individuals who had freely consented were allowed to participate in the study, and no one was coerced to participate. Participants were also informed that they had the right to withdraw at any point of participation in the study.

Confidentiality and Anonymity: The identity and replies of respondents were confidential. Participant logs, the only link between identifying information and code numbers, and all data were kept in a locked file cabinet. Only the researcher had access to the files. The code books that linked the participant's names with the code and audio recordings were destroyed once they were translated and checked for accuracy.

3.12 Dissemination Plan

Once results were analyzed, evaluation findings were dispersed among clients and stakeholders, including participants and community members. Ideally, these individuals were ready and receptive to recommendations, since the evaluation process had incorporated their priorities and interests. The findings were disseminated in a number of ways: detailed reports to the County and National Government, journal publications and conference presentations.

Once evaluation findings had been distributed through the appropriate channels, the goal of this was to improve the likelihood that information would be utilized in policy, program, or organizational changes.

CHAPTER FOUR

RESULTS

4.1 Introduction

Results in this chapter are organized along the two objectives. Section 1 presents results for specific objective 1 which assesses the efficiency of the maternity referral system against recommended national guidelines; this includes characteristics of the referral system network, referral system process and Referral system monitoring. Section 2 includes results of delay factors associated with maternity referral system. The qualitative data were used to complement the results from the RSA tool.

4.2. Overview

All the facilities reported to either refer or receive clients from other health institutions. Out of 11 health facilities, 8(72.7%) reported to use a referral system to accept patients and/or link patients to other services. The most commonly listed organizations working together under the maternity referral system were hospitals (100%), followed by health centers (54.6%), clinics (45.5%) and TBA's (45.5%)

4.3 Characteristics of Referral Networks and System

4.3.1 Maternity services offered

All (11) the facilities were offering maternity outpatient and referral services and only one (9.1%) was offering Emergency Obstetric and Neonatal Services. All 11(100%) facilities offered services to general population, pregnant women and newborns.

4.3.2 Reproductive health work force

The population served were estimated to range from 11000 to 46000 people. The number of staff working in reproductive health department in those 11 health facilities ranged from 6 to 49. The availability of human resource in the 11 health facilities was

compared with the national service norms and standards where more than half of the facilities (64%) fulfilled the staffing norms for reproductive services; Three out of 6(50%) Tier 2 facilities, 3 out of 4(75%) Tier 3 facilities and 1 tier 4(100%) facility fulfilled the staffing norms for reproductive services.

4.3.3 Directory of network for maternity services

All reported that there is no directory that lists the organizations that provide maternity services.

4.3.4 Formal agreement between referring and receiving facility

Six (54.5%) facilities reported to have a formal agreement between referring and receiving facilities but none was able to show documentation supporting this.

10(91%) of the 11 health facilities reported to refer their maternity patients to MTRH.

4.3.5 Network/Consortium of coordination of maternity referrals.

Four (4) reported to be aware of existence of a network or consortium in which coordination of maternity referral services is the main agenda. The types organizations mentioned to participate in the consortiums include: MOH, Public health unit, Hospital, Health centers, Community based care and Faith based organizations. The frequency of meetings of these consortiums was reported as annually, half yearly, quarterly and one facility was not sure. None was able to provide evidence of the meetings even after reporting the frequency of the meeting in a year. All 11 facilities agreed that having such kind of professional interaction is helpful in increasing clients' access to services and improving the maternity referral system.

4.3.6 Referral protocols

Findings from the RSA tool indicated that only 1 (9.1%) facility reported to have documented referral protocols or guidelines for maternity related services which they reported to be specifically for “emergency Obstetric services”.

Another facility reported that... *“there is no specific maternity referral protocol, the only protocol in existence is the accident and emergency department protocols”*.

This is supported by findings from the qualitative tool which indicated that only 2(20%) of the respondents had referral protocols. Quoting the two respondents;

‘We have referral protocols that are available for all or staff to view,’ said one of the nurses in maternity.

A medical officer reported, *‘Yes, we have referral protocols, but not specifically for maternity referrals but for accident and emergency.’*

According to the RSA tool, three (3) facilities reported to have had training of providers on referral protocols, specifically mentioned were: maternity referrals with Maternal and Perinatal Death Surveillance and Response (MPDSR) which was attended by the maternity in charge and the medical officer and general referral protocol which was attended by staff from various departments in the hospital.

Similarly, 8(80%) of the respondents from the qualitative tool, reported that there have been no trainings conducted on the referral process. Those that had undergone training, reported a one off event except one who said it is was done on a quarterly basis.

4.3.7 Infrastructure

Results from the qualitative tool revealed that four (36%) respondents mentioned that transportation of the client to the receiving facility was a major challenge because the ambulances are not enough and readily available. In addition, one (9%) respondent reported bed-capacity in maternity to be a challenge within the referral system. Further quoting respondents... *'There is limited bed capacity to accommodate maternity clients,...we experience incomplete or delayed referrals due to delayed decision making by client and engaged ambulances.'*

4.4 Referral System Monitoring

This section will present results in two major sections looking at the responsibility of the referring and receiving facility when it comes to referral system monitoring.

4.4.1 Referring facility

The most commonly sought referral service is emergency obstetrics and neonatal services (81.8%). Nine facilities reported to refer patient to MTRH, while 1 reported to seek ICU in Mediheal, St. Lukes, Reale hospital whenever theirs is full. Methods used to refer clients include: telephone referral (33.3%), escort client (26.7%) issue standard referral form (23.3%) blank paper to write referral information (10%) Verbal (6.7%)

The following are some quotes from some respondents when probed further on the process of referral:

'We write on a blank piece of paper and make a telephone call to the receiving facility'

'We take a blank piece of paper where we write the client's information and reason for referral'

'There is a standard referral form which is filled with all the details needed for referral'

‘We ask them to go and inquire about the availability of the bed and then we can write a referral form seeking the service’

Majority of the referrals (63%) were reported to be identified and made by a nurse, while 37% were by a doctor.

4.4.1.1 Record keeping system for outgoing maternity referrals

According to findings from RSA tool, out of 11, 9(82%) health facilities reported to have a record keeping system to keep track of outgoing client referrals. Among the records kept for referrals-out are: general maternity register (43%), Referral-out book or register (29%), referral forms (28%).

In contrast, most (90%) of the respondents of the qualitative tool reported that there was no health information system in place to coordinate, track and monitor maternity referrals.

4.4.1.2 Referral-out Forms

Five of the 11 facilities that referred patients out had referral forms. It was noted that only one facility had the provision for a written feedback on the referral form for counter referral purposes. (figure 1). Additionally, there were no standard referral forms; Some facilities used referral forms from MTRH (figure 2), while other facilities used the same layout and format as MTRH referral form changing only the header (figure 3). Most referral forms had provisions for documenting of patients’ condition on arrival.

4.4.1.3 Communication of referrals-out

According to findings from the RSA, out of 11 health facilities, 10(91%) reported that the provider at the receiving health facility knows that a patient has been referred to them through a phone call.

In support of the above findings, KII also revealed that coordination of referral process was done by phone call for majority of the facilities (80%), either singly or in combination with ambulance services. One of the respondents added that, *'we make phone calls to the receiving facility and sometimes we collaborate with the fire brigade for ambulance services when the facility ambulance is engaged.'* In the same context, another said that the facility sometimes has to hire taxis for their clients especially for emergency cases to MTRH when ambulance services are not available. Other respondents added... *receiving clients in MTRH is a problem; the process is too tedious.... clients are referred to our facility for conditions we cannot manage in our capacity and therefore causing delayed intervention'.*

It is worth noting that only one facility was reported to have a referral coordinator, namely; the medical officer who decides on who is to be referred.

4.4.1.4 Completion of referrals

Nine (82%) of the facilities follow up completion of referral through feedback from the escorting nurse, 1(9%) through phone calls and 1(9%) through contacting the referred patient. Nine respondents answered no while 4 answered yes to a question on whether there is a system to follow up with a client on referral.

4.4.1.5 Recording delays in referral

Only 1 facility reported to have system where they measure time lapse between when referral was made and when a client reached the receiving hospital; *'we make a comment on the referral book after the patient has been received so as to assess delays in referral.'*

4.4.1.6 Follow up after referral

All facilities reported a nurse to be the person who usually follows up on referrals. The following quotes were explanations to the various ways in which they follow up referred patients;

'depending on the severity of condition of the client, the escorting nurse makes the follow up.'

'the referring nurse makes the follow up by contacting the client on her phone'

'the nurse on duty makes the follow up and hands a report to the nurse who comes next on duty'

'the nurse follows up the client through making calls to the receiving facility'

The responses to the above varies from; the escorting nurse making the follow up, the referring nurse calling the client by phone, by calling the receiving facility, and handing over of the reports.

4.4.1.7 Counter-referral

Seven (64%) respondents reported that clients are referred back to their facility for follow up after referral services are received. Eighty-six percent listed Post-natal and family planning as the services they are referred back for. All 11 facilities admitted to not having any special register for documenting the clients that are referred back to the facility. Only 1 facility reported to have calculated a counter-referral rate for maternity referrals however there was no documentation to support this information. In addition, 6(55%) facilities reported to have a system to inform the facility that a client has completed the referral. Among the 6, 1 reported using a section of referral form filled and sent back, while the remainder 5 gave verbal communication by phone or and in person.

4.4.1.8 Client consent

Six (55%) facilities did not obtain permission from the client to follow up with the other provider, while 5(45%) obtained permission, however of these that obtained permission, 4(80%) were verbal while 1(20%) was formal consent.

4.4.2 Acceptance of referrals from other providers as a Receiving facility

Nine (82%) facilities reported to accept referrals from other facilities. Other providers get to know about the services that are provided by the facility through various means; reported by all facilities is the patient service charter. Other means mentioned include: TBA's, peripheral clinics, Annual general meetings and Maternal Child Health clinics.

4.4.2.1 Services sought at the receiving facility

The receiving facilities reported, that the Maternity referrals services sought by referring facilities include: Emergency obstetric and Neonatal services (59%), Normal deliveries (26%), Post-natal services (11%) and lab services (4%).

4.4.2.2 Type of Referring facility

The table below shows the frequency of referral by type of Health facility as reported by the receiving facilities.

Table 4.1: Types of Facilities

Facility type	Frequency
Hospital	1
Health center	7
Private Clinics	7
Faith based org	2
Traditional birth attendance	3
Dispensaries	7

The Tier 2 facilities receive referrals from other dispensaries, private clinics, other health centers and Traditional Birth Attendants (TBA's). The Tier 3 facilities receive referrals from dispensaries, private clinics, health centers and TBA's. Tier 4 reported to receive referrals from Health centers, private clinics, Sub-county and County hospitals and Faith Based Organizations (FBO's).

4.4.2.3 Referral methods

Receiving facilities reported the following methods are used to refer clients to the facilities and is summarized in the pie chart below.

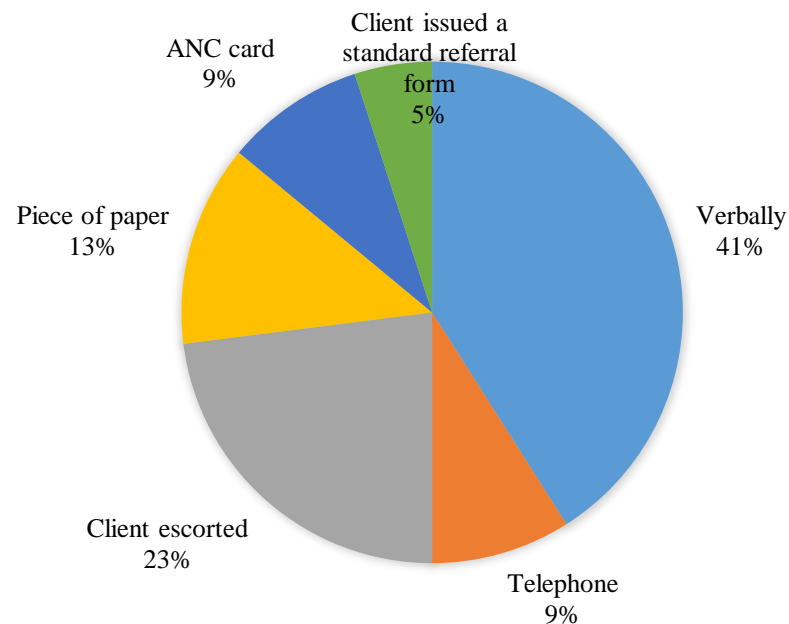


Figure 4.1: Methods used to refer clients to the facility

4.4.2.4 Client details reported at the receiving facility

The following summarizes the information that the clients present with to the receiving facility as reported by the informants.

Information on Referral Particulars

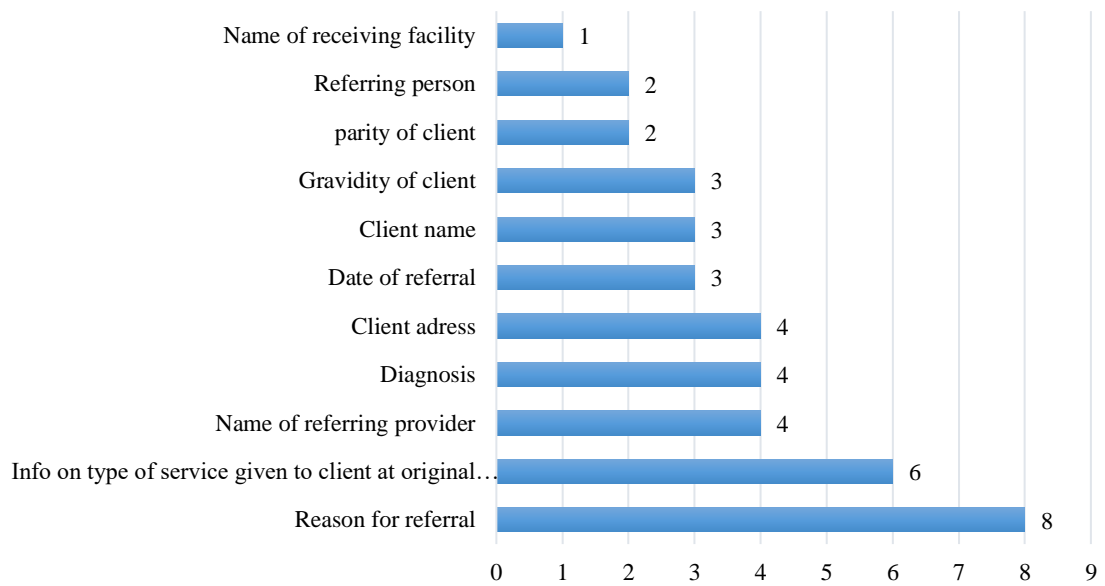


Figure 4.2: Information clients present with at the receiving facility

4.4.2.5 Effectiveness of referral methods to receiving facilities

When asked whether the referral methods used are effective, only 2(22%) of the 9 facilities accepting referrals answered yes. All others thought it was ineffective and went ahead to explain that it could be improved by having a formal referral system, while others suggested having a standard referral form for all referrals. The following includes the information that the facilities record for clients that have been referred to them:

Client information recorded at the receiving facility

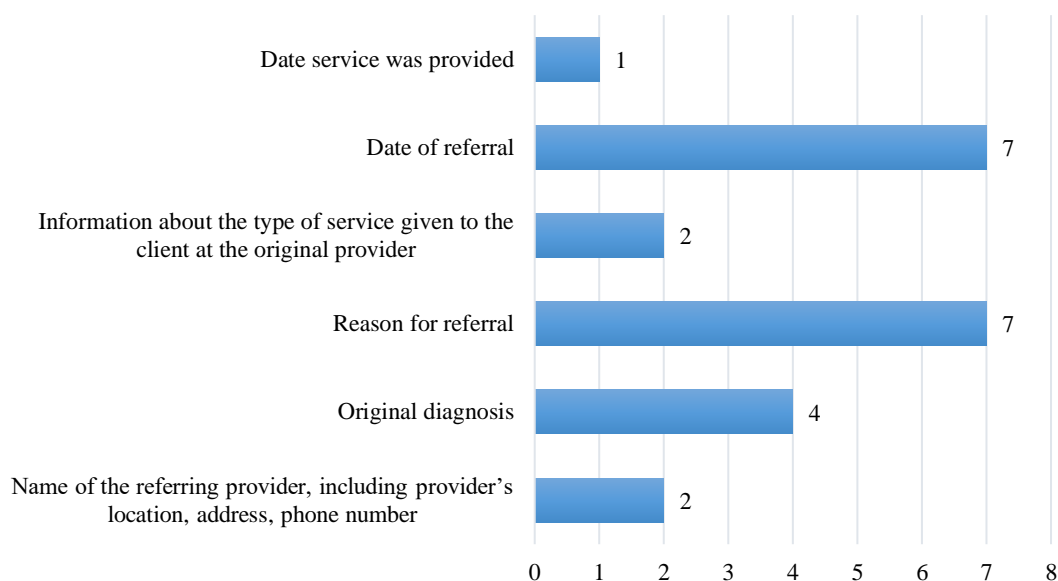


Figure 4.3: Client information recorded at the receiving facility

The above information is recorded in the maternity register in 2 facilities and the general register in 1 facility. Despite the respondents of these 9 receiving facilities admitting to recording client referral information, four of them, report to not having a register to record this information, nor could they provide copies of referral- in forms from other facilities.

Note that none of the facilities above recorded the date that the client is referred back to the original service provider.

4.4.2.6 Counter-referral

Only 3(33%) of the 9 receiving facilities reported to be referring clients back to the original service provider. The information that they send back with the client include: Clients particulars, the outcome and the instructions on the client's management or expected care to be given in the facility where she is referred to. One facility reported to use the referral form to send the patients back while the rest of the 8 facilities had

no specific document for this process. None of the facilities reported to be contacting the originating service provider directly for feedback.

4.4.2.7 Referral-in documents

The findings here are based on 39 referral-in documents that were assessed for essential requirement according to recommended National Guidelines. It was worth noting that apart from MTRH the other selected facilities did not file copies of referral-in documents.

All the patients had referral documents when they presented to MTRH. However, these referral documents varied in forms as indicated in the table below:

Table 4.2: Type of referral document used

Type of referral document	Frequency	Percent
Clinic/ANC card	16	41.0
Official referral form	10	25.6
Mother baby booklet	8	20.5
Plain paper/foolscap	4	10.3
Discharge summary	1	2.6

Ten (26%) had an official referral form while 41% had an ANC card. Among the 39 referral documents with contacts details, most 13(45%) had residence indicated while 11(38%) had both residence and phone number indicated the rest 5(17%) had only phone number.

a) Client contact details

Among the 29 referral documents with contacts details, 13(45%) had residence indicated while 11 (38%) had both residence and phone number indicated the rest 5(17%) had only phone number.

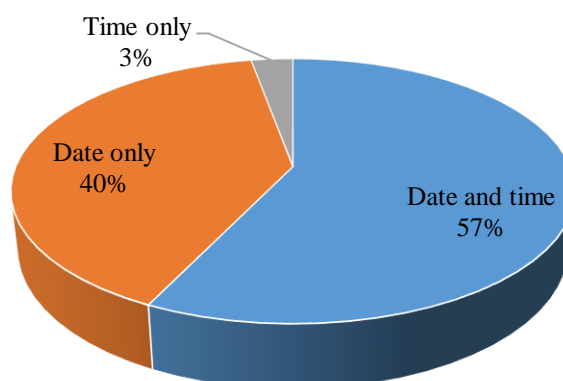
Table 4.3: Next of kin contact details

Contact details	Frequency	Percent
Name	7	25.00
Phone	6	21.43
Name and phone	5	17.86
Residence	2	7.14
Name, address and phone	1	3.57
Residence, phone	1	3.57
Not indicated	6	21.43

About 56.4% (22) of the referral documents were indicated to have had next of kin contact details. The specific next of kin details in those referral documents are as indicated in the table above. Most 7(25%) had only name indicated, only one had all the three (name, address and phone) indicated.

b) Referral Date and Time

Thirty-five (89.7%) referral documents had referral date or/and time indicated where majority (57%) had both time and date indicated and 1(3%) had only time indicated.

**Figure 4.4: Referral date and time**

c) Patient demographics

Almost all 37(94.9) the referral documents had one or more of demographic information indicated. In this only 4(10.8%) had sex indicated of which had also age details included. All 37(100%) had age /date of birth indicated.

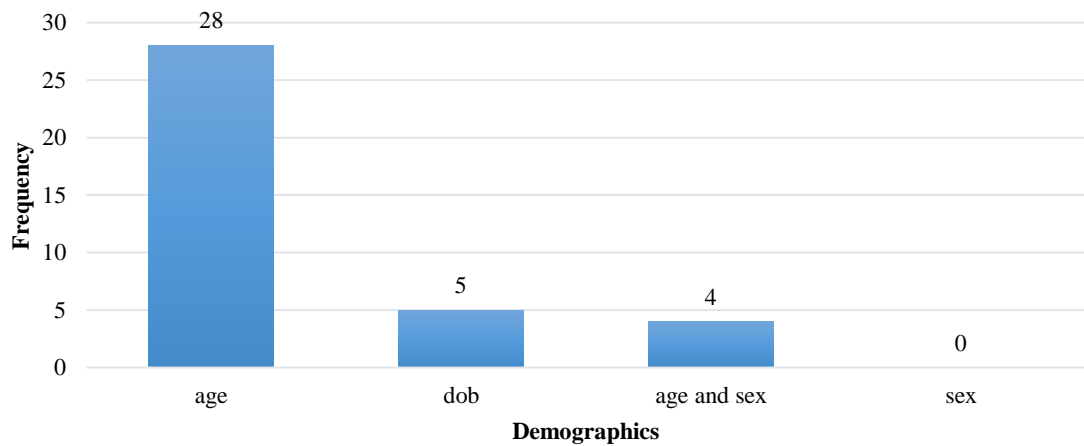


Figure 4.5: Patients date of birth, age and sex

d) Reason for referral

Three (7.7%) referral documents had no information regarding reason for referral. The rest 36(92.3%) had referral reason indicated where most 8(22.2%) the reason was “for further management” Furthermore, in the place of ‘the reason for referral’, 25% of the documents had the diagnosis indicated instead.

e) Diagnosis

Only 28(71.8%) of the referral documents had the diagnosis of the patients indicated whereby the leading diagnosis were postdatism (17.2%), followed by fetal distress (13.7%) and (6.8%) for obstructed labor, postpartum hemorrhage and ante partum hemorrhage. One incorrect diagnosis was noted from the referral documents: retained second stage.

f) Treatment and vitals

Out of the 39 referral documents reviewed, 23(59%) had indicated the treatment given before referral. Fourteen (35%) had vitals indicated, 10(26%) had IV fluids/normal saline given and 1(2.5%) had only the lab results for BS for Mps.

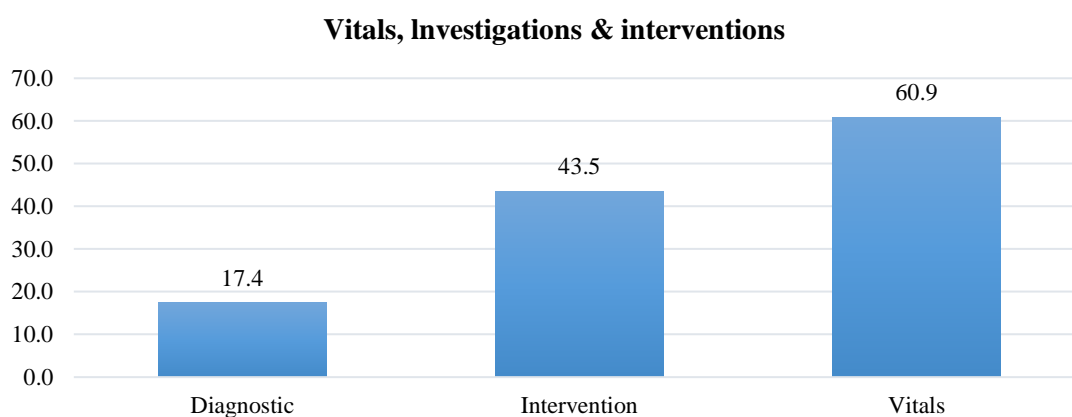


Figure 4.6: Vitals investigations and interventions

g) Details of physician or health care provider

Name and or other relevant details of physician or health care provider making the referral were indicated in 25 (64.1%) of the referral documents. Eleven (28.2%) of the referral documents had the name of the referring health worker, 11(28.2%) had the signature of the referring health care provider while only 3(7.69%) had both name and signature.

h) Referring facility details

Thirty-seven (95%) of the referral documents had the referring facility name indicated. Burnt Forest Sub-County Hospital and Huruma Sub-County Hospital had the highest number (21.6% each) of referrals to MTRH as per the sampled referral forms while West Maternity Health Centre had the least.

Client medical history was recorded in 23(58.97%) of the referral documents reviewed. The name of the receiving health facility was indicated in 20(51.28%) of the referral documents.

Figure 4.7 summarizes the frequency at which information appears on all the referral documents.

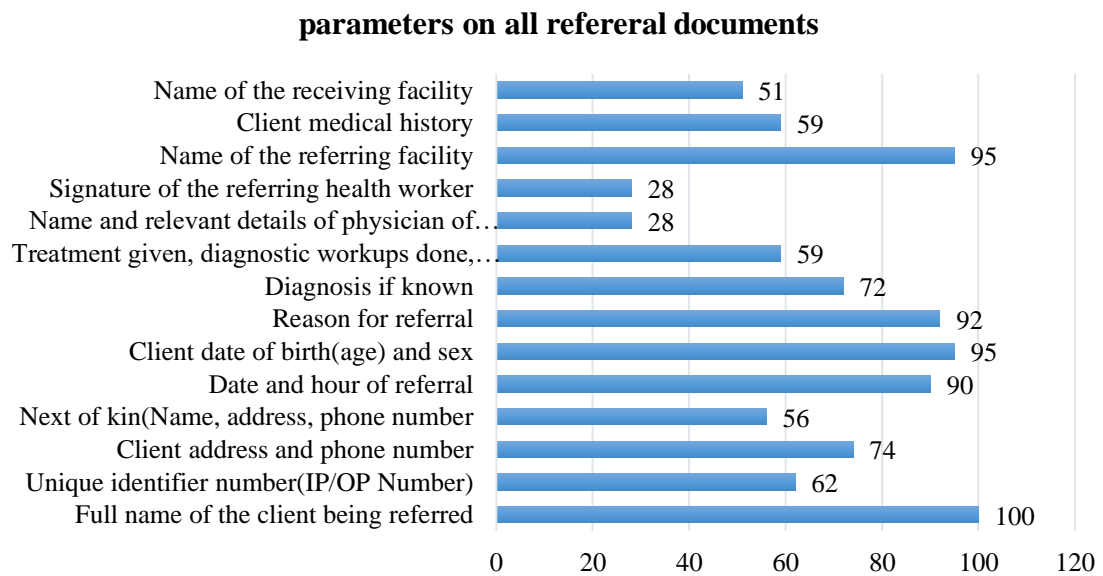


Figure 4.7: Parameters on referral documents

4.4.2.8 Official referral-in forms

All the 10 official referral forms from the different facilities were missing some essential information. The completeness of these referral forms ranged from 50-70%. Fifty percent refers to the referral form lacking half of the essential information required of a referral form, while 70% refers to the form lacking 30% of the information.

All 10(100%) the referral forms contained client full names while 3(30%) had the unique identifier number indicated.

Client contact details were documented in 4(40%) of the referral forms. Out of the 6 referral forms that didn't have client contact details, 2 had no provision on the form to record such details.

Next of kin details were present in 3(30%) of the referral forms.

Nine (90%) of the referral forms had the referral time and date indicated. Similarly, 9(90%) had clients' age/date of birth. All 10(100%) referral forms had a reason for referral indicated, however out of these 7(70%) had the medical diagnosis stated in place of the reason for referral.

Eight (80%) of the referral forms had the reasons for referral indicated; however, half of these had similar entries for 'reason for referral' and 'diagnosis' rendering no distinction between the two fields.

Figure 4.8 shows the frequencies at which details in the official referral forms appeared.

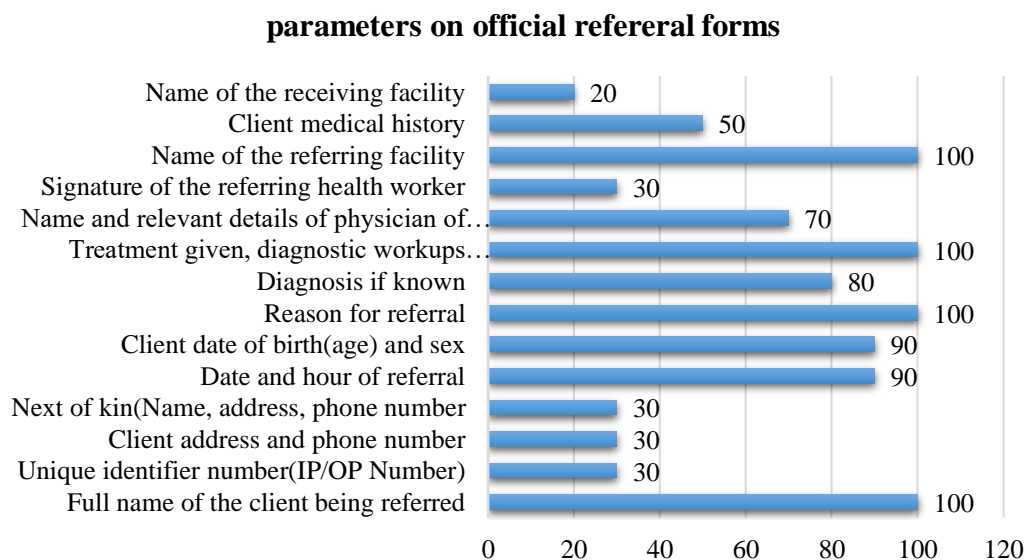


Figure 4.8: Parameters on official referral forms

Appearance of details between official forms against all referral documents

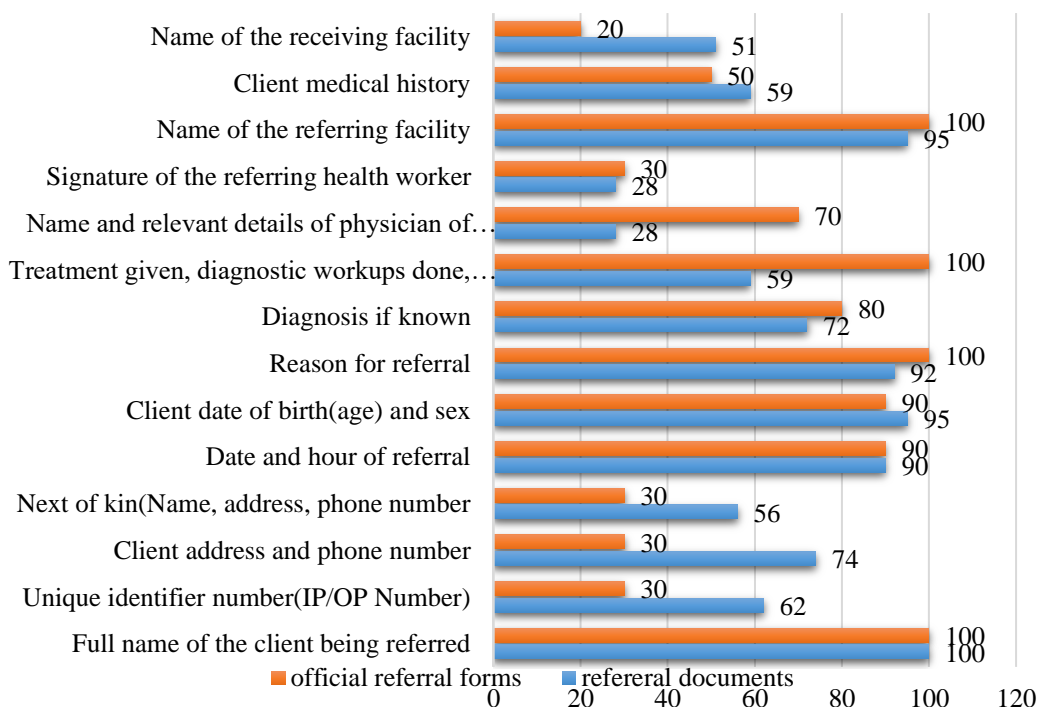


Figure 4.9: Appearance of details between official forms and other documents

4.4.2.9 Data quality and use

Only 2(18%) facilities said there exists a mechanism to ensure the accuracy of recorded information on referral initiation and completion. The two mentioned facilities explained... *‘The data is gathered by the health record officer who compiles the report but quality checks have not been done’* While the other reported, *‘There is monthly report on referrals done at the facility’* To explain further on the frequency of the data quality checks, the facilities reported *‘We did our data quality check 4 months ago’* while another reported... *‘it is done every month’*. In addition, 1 facility reported that there were actions or improvements following data quality checks of referral information; quoting the respondent... *‘there is great improvement mostly on referral system in the facility’*. It was reported to take around 2-3 hours for staff to document, report, and analyze referral data. Three (27%) facilities reported to be

analyzing referral data, all 3 reported that the analysis is done on a monthly basis by the nursing officer in charge. None of the 11 facilities calculate a referral rate. Eight (8) facilities reported to be reporting referral data to someone in the facility or elsewhere; Hospital management (4), Sub County health records officer (2), Nursing officer in charge (1) and District Health Information System (DHIS), one. Almost all (10) the respondents agreed that the referral data would be helpful to providers and program managers. The reasons are given below:

Table 4.4: Data quality and use

	Frequency
It helps to know the number of client referred and if there is any failure rate	1
It improves the quality of the referral system	6
It makes referral easier and make the receiving facility prepare well	1
It will improve referral system and improve management of maternal cases	1
It will improve care given to the clients	1

5(45%) facilities reported to discuss data on referrals. The responses to frequency at which the referral data is discussed was reported as follows: quarterly (1), Three monthly (1), rarely (1), and not sure (2). Additionally, among those who discuss referral data include Hospital management team (HMT), Nurses, Maternity staff. The content of these discussions included: the number of referrals, who needs to be referred, reasons for referrals and the follow ups of the referrals, type of referrals made in that particular month and what cases were referred to the facility and Challenges of referrals. None was able to say whether programmatic or clinical changes were made based on these discussions.

Only one facility reported to have an evaluation of the referral system. Which was done by MTRH. The last time evaluation was done was 2016, however the respondent

has never seen the evaluation report and even during the interview the report could not be traced.

4.4.2.10 Client confidentiality and satisfaction

Almost all (10) the respondents reported that the name of a client or other identifying information recorded is in registers for referral. However, name of a client or other identifying information were not being recorded by majority (10) in any reports about a referral (only one facility reported to have been doing so which included also the reason for referral and the outcomes). All (11) facilities reported to have some considerations made to ensure client confidentiality is maintained and for all facilities, these measures included storage of the client information in lockable places or and in password protected computers. One participant reported to have some concerns about the maintenance of confidentiality within the information and/or referral tracking systems, and suggested that “...every client should have separate file where her information is stored” to improve maintenance of confidentiality.

Similarly, only one respondent reported that there exists a system to record referral outcomes for the patients who were referred out whereby, they record in the maternity book after receiving the feedback from the referring facility. 3 facilities reported that the providers regularly ask clients what they think about the referral process. However, only 1 respondent gave the details of how it done, “...*when we meet the clients when they come for postnatal clinics*”. None of the facilities reported to have a standard way of assessing the clients’ satisfaction with the referral process. However, the respondents gave their opinion on what would be the main reasons for client dissatisfaction with the referral process as tabulated below:

Table 4.5: Respondents' opinion on reasons for client dissatisfaction

Respondents' opinion on reasons for client dissatisfaction	Frequency
Tedious referral process	2
Delay in the referral completion	2
Delay of ambulance/ Inadequate transportation for referral	5
Inadequately trained staff on referral	1
The delay on being received at the receiving facility	5

Other barriers that prevent clients from completing the referral process that were mentioned include: financial (60%) and transport constraints (40%)

4.5 Respondent Recommendations on Improving the Referral System

The recommendations on how the referral system could be improved were as follows:

4.5.1 Referral networks and systems

Recommendation from the RSA tool on improving the maternity referral system included: provision and implementation of referral guidelines and protocols (40%), training of staff on referral system guidelines and protocols (18.5%), improving efficiency at the receiving facility (4%), improve triage at MTRH for receiving referrals (4%), and add more ambulances to serve the referral system in order to strengthen the linkage within the referral network (18.5%).

Responses from the qualitative tool on improving the maternity referral system included: increasing the number of available ambulances within the county (21%), provision of referral guidelines on maternity referrals (34%), training of staff in maternity referral system protocols (21%), increasing the number of staff serving maternity department (8%), increasing the bed capacity of maternity units (4%), having an ambulance for each facility with a maternity unit (4%), increasing

efficiency of receiving patients at the receiving facility (4%), as well as strengthening the response to emergency obstetric cases from referrals in or going out.

4.5.2 Referral System Monitoring

Recommendations on how the monitoring of referrals could be improved were made as follows: provision of standardized referral forms for all facilities with referral services (11%), and ensuring a feedback mechanism to the referring facility (4%).

Other responses included the following: *'have a system database to track the referrals'*, *'Improve the linking up of referring and receiving facilities'*, *'Provide a standard system of monitoring referrals'*, *'Regular monitoring and evaluation of referral systems to be done at least quarterly'*, *'The receiving facility should send feedback to the referring facility and hold Regular meetings between the referring and receiving facilities'* and *'There is need for follow up referrals on referral registers.'*

Responses from the qualitative tool on improving the maternity referral system monitoring included holding regular reviews on maternity referrals (4%).

4.6 Delay Factors

According to the three delay model on accessing health care services; delay 1 - delay by the client in deciding to seek health care; delay 2 – delay in reaching a health facility; and delay 3 – delay in receiving the appropriate care at the health facility, the opinion of the health care workers interviewed was that Delay 2(43.75%) was the most common, followed by Delay 3(37.5%), and then Delay 1(12.5%), while 6.25% reported no delay.

When probed further, key informants gave the following reasons for the delays as listed in the table 4.6. It is noted that the most common reasons mentioned for the different delays was financial restrictions by the patient for delay 1 and 2,

transportation challenges for delay 2 and 3 and high work load at the receiving facility for delay 3.

Table 4.6: Reasons for Delays

For delay in deciding to seek health care(delay 1)	
poor health seeking behavior	20%
Preference to deliver by TBAs	10%
stigma especially for teenage pregnancies	10%
knowledge gap on danger signs	20%
Religious restrictions	10%
Financial restriction by the patient	30%
For delay in reaching the health facility(delay 2)	
Poor transport linkage at community level	33%
Financial restrictions	33%
Rural location where transportation is a challenge	33%
For delays in receiving the appropriate care(delay 3)	
staff shortage	7%
High workload at receiving facility	29%
Inadequate number of ambulances	29%
Lack of services sought at primary facility	21%
poorly equipped and capacitated county hospital	7%
Health worker's strike	7%

Quoting some respondents on delay 2, *‘some clients say they couldn’t raise funds to pay for transport to the facility.... some patients come from areas where they have to walk long distances to access public transportation.’*

One respondent said on delay 3, *‘we all refer to MTRH and consequently increase the work burden there..... another reported, ‘when we to refer, we take a while doing so because ambulances aren’t enough and this causes a delay giving services’ ‘Our county hospital is poorly equipped and capacitated to handle emergency maternity cases forcing us to refer all high risk or emergency cases.’*

Under recommendations on reducing these 3 delays, the following were cumulative responses from the different key informants from the qualitative tool

Table 4.7: Recommendations for reducing delays

Delay in deciding to seek health care(delay 1)	
empower TBAs to refer timely	40%
Patient education at ANC on danger signs	40%
Hold chief barazas at community level to educate community on importance of good health seeking behaviour	20%
Delay in reaching the health facility(delay 2)	
Increase number of ambulances to serve the community	50%
Provide transport for community referrals e.g. tuk tuk and motorbikes	25%
Have emergency and functional call numbers for county ambulance services accessible to all	25%
Delays in receiving the appropriate care(delay 3)	
Improve triage at receiving facilities	8%
Increase staff numbers to meet demands of maternity services	15%
Increase the number of county ambulances	23%
Capacitate public health facilities to offer level of care according to tier	15%
Strengthen public private partnership to ensure emergency maternity cases receive care during health worker's strike	8%
Build capacity of other facilities to offer EmONC	23%
Capacitate county referral hospital to handle emergency maternity cases and reduce the need for referral while decongesting MTRH	8%

Most responses on recommendations for reducing the delays were geared towards improving the transport network by having better community linkage as well as increasing number of ambulances in the county

CHAPTER FIVE

DISCUSSION

5.1 Introduction

In this cross sectional study, the situation of the maternity referral system in public health facilities in USGC was assessed. The results point out a number of gaps in the maternity referral system within the County which hosts tier 1, 2 & 3 facilities and one tier 4 facility serving the county and other neighboring counties. The findings are discussed in the sections below.

5.2 Efficiency of the Maternity Referral System against National Referral Guidelines

5.2.1 Characteristics of maternity referral networks and system

From the study findings it is noted that out of the 11 public health facilities offering maternity outpatient and referral services, only one facility (MTRH) offered EmONC services, yet 81% of the referral services sought account for EmONC. According to a study by Mashishi (2010) in South Africa, over-utilization of a maternity unit may affect the quality of patient care that may result in maternal and perinatal mortality, client dissatisfaction, litigations and bad image of the hospital. The facilities that have the highest number of maternity referrals to MTRH are not capacitated to offer services according to the tier of care. A key informant reported, '*clients are referred to our facility for conditions we cannot manage in our capacity and therefore causing delayed intervention*'. Additionally, this causes a significant burden to MTRH and compromises on the emergency response time as evidenced by responses from some respondents, '*receiving clients in MTRH is a problem.... the process is too tedious*'. A study in Malawi supports the importance of equipping and decentralizing maternity services to handle EmONC with limited resources (Kongnyuy *et al.*, 2008).

More than half of the facilities (64%) fulfilled staffing norms for reproductive services. However, only half of the tier 2 facilities (level 2 and 3) had fulfilled these norms. A similar study in 8 counties in Kenya revealed that most of the sampled facilities had staff shortages compared to MOH national service standards and norms (MOH, 2013b). According to the Kenya Health Sector Referral Implementation Guidelines (KHSRIG) 2014, it is mandatory for all emergency referrals to be accompanied by a trained staff to the receiving health facility (MOH, 2014). Therefore, the inadequacy in staffing compromises the quality of care in several ways; it forces the health care worker to choose between abandoning the work station or accompanying the patient for emergency referral, which are both unacceptable; it also makes it difficult for the health care provider to meet the normal demands for maternity services leading to burnouts as well as compromising maternal and neonatal outcomes.

Findings indicated that no facility had a directory that lists the organizations that provide maternity services. Having a directory would reduce time on the third delay (delay in receiving appropriate care) by directing health care providers as to which facility offers the particular referral service sought. This is supported by a respondent's stating that clients are referred to them for services which the facility does not offer, leading to delayed intervention due to the need for further referral which could be avoided if a directory was in place.

Providers admitted to the awareness of existence of consortiums of coordination of maternity referral services. However, there was no documentation to support the claim, but all facilities agreed that such meetings could be beneficial in improving the maternity referral systems. Moreover, despite more than half of the public health

facilities reporting to have a formal agreement between referring and receiving facilities, none was able to show documentation supporting this.

There were no specific protocols for maternity referrals to guide the health care workers on the proper procedures to follow during the referral process. This is supported by findings in a study in Kenya which revealed that only 14% of facilities had referral guidelines or protocols (MOH, 2013b). Additionally, only 27% of the facilities reported to have staff trained on maternity referral protocols, leaving the health care providers to apply what is within their knowledge and capacity. This does not necessarily translate to the right procedures on maternity referrals. This is similar to a study by Kamau *et al.* (2017) whereby majority of the health care workers (53%) were not trained on referral guidelines.

All the above gaps may have compromised the efficiency of the maternity referral system in UGC due to the variations in processes of referral as evidenced by a number of responses including but not limited to;

‘We write on a blank piece of paper and make a telephone call to the receiving facility’

‘We take a blank piece of paper where we write the client’s information and reason for referral’

‘There is a standard referral form which is filled with all the details needed for referral’

‘We ask them to go and inquire about the availability of the bed and then we can write a referral form seeking the service’.

Thirty-six percent of the respondents noted transportation of clients to the receiving facility as a major challenge due to inadequate and/or engaged ambulances. This is similar to a study in Kiambu County whereby majority of the health care workers (67%) noted inadequate transportation facilities to be a major challenge in the referral process (Kamau *et al.*, 2017). Delay in transportation means delay in receiving

relevant services, which is especially critical for timely intervention in emergency maternity referrals. In spite of the challenges, good practices are noted whereby there is inter-sectoral collaboration department of health and the fire department.... *‘we make phone calls to the receiving facility and sometimes we collaborate with the fire brigade for ambulance services when the facility ambulance is engaged’*. Additionally, a level of commitment and accountability from health care providers is noted by the fact that they go to the extent of hiring taxis, especially in emergency cases, to ensure prompt maternity referrals for their clients in the absence of the ambulance.

One of the good practices noted by most (91%) of the facilities is the communication of referrals to the receiving facility by phone call. This notifies in advance the receiving caregiver and allows for adequate preparations to be made while enhancing continuity of care and reducing delays in receiving clients. However, only one facility reported to have a referral coordinator. A referral coordinator is important in enhancing accountability within the referral system, which includes and not limited to appropriate communication of referrals, documentation of referrals and data collection for monitoring referrals, organizing meetings to discuss referrals, ensuring protocols are in place and relevant staff are aware and trained on this protocols.

5.2.2 Referral System Monitoring

Findings from this study indicated that half (50%) of referrals were communicated through verbal means, 5% standard referral forms and 13% on paper. This contrasts findings from a study done by MOH (2013b) in 8 counties in Kenya where communication for referrals was done through verbal means (31%), referral forms (32%) and handwritten notes (39%). The review of the referral documents further revealed that out the 39 referral-in documents at MTRH only 26% represented the

official referral forms. It is worth noting that there were no standard referral forms for use by the public health facilities in UGC. This is supported by a study by Kamau *et al.* (2017) in Kiambu County which established that more than half (52%) of health facilities did not have standardized referral documents.

Consequently, the accuracy and completeness of referral information varied across the facilities. Completeness of the official referral forms ranged from 50-70 percent. Continuity and precision of care would be compromised at the receiving facility if the health care provider is not furnished with the relevant information. There is a risk of either omitting vital treatment or giving unnecessary treatment. For instance, 30% of the patients were referred to MTRH maternity without a diagnosis and one had an incorrect diagnosis. Additionally, a good percentage (89.7%) of referral documents had date and time of referral indicated, however emphasis on completing this parameter ought to be placed as it informs on delays and completeness of referrals made. It is worth noting that the least filled parameter on the referral documents was the name and signature of the referring health care provider.

It is also noted that only one facility had a provision for counter referrals on the referral form, meaning there is no proper mechanism for tracking counter referrals right from the primary care giver. Having complete and accurate standard referral forms for use by all health facilities within the county ensures that information is uniform and reliable to feed into the referral monitoring system and to offer continued quality care.

There was a contradiction between the facility managers who informed the quantitative tool (RSA) and the health care workers involved in the maternity referral process; 82% of the managers reported to have a record keeping system to track

outgoing referrals while 90% of the health care workers reported that there was no information system in place to coordinate, track and monitor maternity referrals. This reveals a disconnect or a lack of awareness on either part which translates to poor communication between management and the frontline workers, ultimately compromising on the quality of referral data being collected.

Only one facility reported to have a system where they measure time lapse between when referral was made and when a client reached the receiving facility. This reveals a significant gap in tracking delays within the referral system, which would inform on the need for improvement to enhance efficiency.

All facilities had a designated person to follow up on referrals, however the follow-up mechanisms varied across the different facilities. The responses varied as follows;

‘depending on the severity of condition of the client, the escorting nurse makes the follow up.’

‘the nurse on duty makes the follow up and hands a report to the nurse who comes next on duty’

‘the nurse follows up the client through making calls to the receiving facility’

‘the referring nurse makes the follow up by contacting the client on her phone’

The last response exposes a weakness in the follow-up of referred patients as reaching these patients may or may not be successful depending on the situation. The second response reveals a lack of understanding on the purpose of these follow-ups.

There is evidence in the results to show that measures to maintain client confidentiality are taken. While this is commendable, more than half of the facilities did not seek client permission to follow-up on the referral, and those who did obtained it by verbal means. Additionally, only 27% of the facilities reported to seek the clients’ opinions on the referral process, however no facility had a standard way of

assessing the clients' satisfaction with the referral process. Without adequate information on the clients' satisfaction, it becomes difficult to understand and implement interventions to meet the expectations of the clients.

5.3 Delay Factors Associated With Efficiency of the Maternity Referral System

The most common delay in accessing maternity health care is that of reaching the health facility (44%). The findings support the findings of Echoka et al. (2014) which also recommended that, in order to influence decision making towards addressing the three delays, interventions to reduce maternal mortality and morbidity must consider the challenges faced by pregnant women before reaching the health facility. However, the study findings contrast with a longitudinal study by Barnes-Josiah *et al.* (1998) in Haiti that reviewed 12 maternal deaths and established that 47% of the maternal deaths were attributed to delays in deciding to seek care. This finding also contrasted with that of Mgawadere, Unkels, Kazembe and Broek (2017), Gelany, Mansour and Hassan (2015) and Combs, Sundby and Malata (2012) which found the most common delay to be that of receiving treatment (delay 3). Additionally, in a study in Myanmar by Win, Vapattanawong and Vong-ek (2013), the most common delay was deciding to seek care (delay 1).

The second most common delay in this study was the delay in receiving appropriate care (38%) which is line with the findings by Barnes-Josiah *et al.* (1998) which established that 41% of the maternal deaths were as a result of inadequate care at a medical facility.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

When assessed against elements of functionality of a referral system in a developing country, majority of the facilities lacked protocols and guidelines on referrals and could not offer EmONC services according to the norms and standards, very few providers were trained on referral protocols, there was no standardized referral documentation, and majority of the facilities had no provision for communicating counter-referrals and recording delays. In addition, there was incomplete filling of referral forms. The study findings, therefore, revealed that the maternity referral system in UGC is less than optimal.

The study also revealed that the most common delay in accessing maternity health care in UGC is that of reaching the health facility.

6.2 Recommendations

In order to strengthen the maternity referral system, the following are recommendations to the county:

6.2.1 Policy

The researcher recommends to the national and county governments to;

1. Develop an official maternity referral system with its protocols and guidelines
2. Develop a standard Monitoring framework on maternity referrals, organize for quarterly stakeholder forums for private and public health facilities as well as other sectors to discuss the maternity referral system and ways of improving it.
3. Develop and distribute standard referral forms and other tools necessary to record maternity referrals.

6.2.2 Practice

The researcher recommends to the county health management teams to;

1. Train health care personnel on the referral protocols according to recommended guidelines.
2. Improve the reception process at receiving facilities by strengthening response to emergency maternity referrals in order to reduce delays in giving appropriate care.
3. Capacitate facilities with necessary equipment and personnel according to the level of care in order to provide services locally and avoid the need for referral.
4. Increase the number of functional ambulances and form intra-sectoral and inter-sectoral collaborations to improve the transport network for maternity referrals.

6.2.3 Further Research

The researcher recommends to other scholars in the field of public health and the county research unit to;

1. To do a comprehensive study on efficiency of the maternity referral system to cover both private and public facilities.
2. To do a study to quantitatively measure the various delays within the maternity referral system.
3. To do a similar cross-sectional study at a later time after findings have been disseminated in order to compare dynamics or changes from the findings of this study.

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APPENDICES

Appendix I: Referral System Assessment Tool

REFERRAL SYSTEM ASSESSMENT INSTRUMENT	
MATERNITY REFERRAL SYSTEM	
<p>NAME OF INSTITUTION OR FACILITY: _____</p> <p>LOCATION (community and city and district): _____</p> <p>ORGANIZATION TYPE: 1 Government: ___ Tier: _____ 2 NGO/CBO 3 Private for-profit 4 Faith-based organization 5 Other: _____</p>	
RESPONDENT AND INTERVIEWER INFORMATION	
<p>RESPONDENT NAME: _____</p> <p>POSITION: _____</p> <p>CONTACT INFORMATION: Telephone: _____ E-mail: _____</p> <p>CONSENT: YES NO</p>	<p>DATE OF INTERVIEW: __ __/__ __/__ __ MM DD YYYY</p> <p>INTERVIEWER: _____</p> <p>RESPONDENT CONSENT SIGNATURE: _____</p>
INTERVIEW GUIDE DESCRIPTION	
<p>This Interview Guide contains five sections:</p> <p>Section 1: Background characteristics of facility or organization</p> <p>Section 2: Characteristics of the referral network</p> <p>Section 3: Referral system monitoring</p> <p>Section 4: Referral system processes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Referral protocols <input type="checkbox"/> Data quality and use <input type="checkbox"/> Client confidentiality and satisfaction <p>Section 5: Respondent recommendations</p>	

SECTION 1: BACKGROUND CHARACTERISTICS OF FACILITY OR ORGANIZATION		
No.	QUESTION	RESPONSE
<p>READ: First, I would like to thank you for agreeing to be interviewed about the maternity referral system. This interview should last about 90 minutes. The answers that you give will help assess the referral system's performance and help to make recommendations for improving referrals and the continuum of care to clients. I would like to start by asking you a few general questions about the maternity referral system.</p> <p>(Please record responses, including detailed descriptions, in the right column. Even where coding categories are provided, questions are open-ended, and there is no limit on the amount of information you can provide.)</p>		
1.1	<p>What types of reproductive services does this organization or facility provide?</p> <p>PROBE: Any others? (Circle all that apply.)</p> <ol style="list-style-type: none"> 1. Outpatient maternity services 2. In patient maternity services 3. Emergency obstetric and neonatal services 4. Referral services 5. Other: _____ <p>PLEASE SPECIFY</p> <p>USE SPACE TO THE RIGHT TO LIST ADDITIONAL SERVICES OR COMMENT ON SERVICES PROVIDED.</p>	
1.2	<p>Who is your target population?</p> <p>PROBE: Any others? (Circle all that apply.)</p> <ol style="list-style-type: none"> 1. General population 2. Pregnant women 3. Newborns 7. Other: _____ <p>PLEASE SPECIFY</p>	
1.3	<p>Do you know the approximate number of people living in the area(s) served by your organization/facility? IF SO, can you please tell me how many?</p>	

SECTION 1: BACKGROUND CHARACTERISTICS OF FACILITY OR ORGANIZATION		
No.	QUESTION	RESPONSE
1.4	<p>How many people work in your facility in the area of reproductive health?</p> <p>What is the ideal number?</p> <p>IF UNSURE, please give an estimate.</p>	
1.5	<p>Do you refer or receive clients from other institutions?</p> <p>IF NO, SKIP TO QUESTION 2.1.</p>	
1.6	<p>What types of organizations do you work with under maternity referral system?</p> <p>PROBE: Any others? (Circle all that apply.)</p> <ol style="list-style-type: none"> 1. Hospitals 2. Health centers 3. Public health unit 4. Clinics 5. Specialized reproductive health clinics 6. NGOs 7. Community-based care 8. Faith-based organizations 9. Outreach maternity programmes 10. Traditional birth attendants 11. Other: _____ <p>PLEASE SPECIFY</p>	
1.7	<p>Please list the names of the organizations or facilities you most commonly refer to.</p> <p>FOR HOSPITALS: Please specify</p>	

SECTION 2: CHARACTERISTICS OF THE REFERRAL NETWORK		
No.	QUESTION	RESPONSE
Now I would like to ask you a few questions specifically about the referral system.		
2.1	<p>Does your facility use a referral system to accept patients and/or link patients to other services?</p> <ol style="list-style-type: none"> 1. Accept patients 2. Refer patients out 3. Both <p>Please describe.</p>	
2.2	<p>Is there a directory that lists the organizations or facilities that provide Maternity and other related services in the area?</p> <p>IF SO, please describe when and how this was assembled.</p> <p>OBTAIN copy of the service provider</p>	
2.3	<p>Is there a formal agreement between referring and receiving institutions?</p> <p>IF SO, please describe the agreement:</p> <ol style="list-style-type: none"> 1. What is covered? 2. Are all service providers included? <p>OBTAIN copy of the agreement(s).</p>	
2.5	<p>Is there a network or consortium in which coordination of maternity referral services is the main agenda?</p>	
2.6	<p>IF NO CONSORTIUM EXISTS:</p> <p>Do you think that this is something that would be helpful?</p> <p>IF SO, how or why would it be helpful?</p> <p>SKIP TO SECTION 3.</p>	

SECTION 2: CHARACTERISTICS OF THE REFERRAL NETWORK		
No.	QUESTION	RESPONSE
2.7	<p>Which types of organizations participate in this consortium?</p> <ol style="list-style-type: none"> 1. MOH 2. Public health unit 3. Hospitals 4. Health centers 5. Clinics 6. Specialized reproductive health clinics 7. NGOs 8. Community-based care 9. Faith-based organizations 10. Outreach maternity programmes 11. Traditional birth attendants 12. Other: _____ <p>PLEASE SPECIFY</p> <p>Please provide details and names of organizations.</p>	
2.8	<p>How often do consortium participants meet?</p> <p>OBTAIN copy of agenda and/or minutes of last consortium or network meeting. IF NOT AVAILABLE, NOTE WHY.</p>	
2.9	<p>What types of issues are discussed at these meetings?</p>	
2.10	<p>Is this type of professional interaction helpful in increasing client's access to services?</p> <p>PROBE: How is it helpful?</p>	

SECTION 3: REFERRAL SYSTEM MONITORING		
No.	QUESTION	RESPONSE
3A: MARENITY REFERRALS MADE AND COUNTER-REFERRALS		
Now I would like to ask you some questions about how your facility tracks outgoing and incoming referrals. First, I would like to ask you about referrals made by your organization to other services.		
3.2	<p>What are the services for which your organization refers maternity clients elsewhere?</p> <p>PROBE: Any others?</p> <p><i>(Circle all that apply.)</i></p> <ol style="list-style-type: none"> 1. Outpatient maternity services 2. In patient maternity services 3. Emergency obstetric and neonatal services 4. Referral services 5. Medical follow-up 6. Other: _____ <p>PLEASE SPECIFY</p>	
3.3	<p>To where do you usually send referrals?</p> <p>PROBE: Any others?</p> <p><i>(Circle all that apply.)</i></p>	
3.4	<p>Please describe the method(s) and the processes that are used to refer clients.</p> <p>PROBE: Do you use any of the following?</p> <p><i>(Circle all that apply.)</i></p> <ol style="list-style-type: none"> 1. Verbal (tell them where to go) 2. Issue standard referral form 3. Blank paper to write referral Information 4. Telephone referral 5. Escort client 6. Other: _____ <p>PLEASE SPECIFY</p>	

SECTION 3: REFERRAL SYSTEM MONITORING		
No.	QUESTION	RESPONSE
3.5	<p>Please describe who identifies and assesses client needs and makes a referral.</p> <p><i>(Circle all that apply.)</i></p> <ol style="list-style-type: none"> 1. Referring doctor 2. Nurse 3. Patients' relatives 4. Support staff 5. Other: _____ <p>PLEASE SPECIFY</p>	
3.6	<p>Does your organization have a record keeping system to keep track of <u>outgoing</u> clients?</p> <p>IF SO, describe in detail.</p> <p>PROBE: Do you use any of the following:</p> <ol style="list-style-type: none"> 1. Patient register or individual medical record 2. Retain copies of Client Referral Form 3. Referral register 4. Other: _____ <p>PLEASE SPECIFY</p> <p>OBTAIN copy of registers and Client Referral Forms that are used.</p>	
3.7	<p>IF NO COPY IS AVAILABLE, describe the information and data elements that are recorded for outgoing referrals.</p>	
3.8	<p>IF STANDARD CLIENT REFERRAL FORMS ARE MENTIONED IN 3.6, ASK (OTHERWISE, SKIP TO 3.9).</p> <p>How is the supply of Client Referral Forms or slips monitored?</p>	
3.9	<p>How does the provider at the <u>receiving</u> organization know that a patient has been referred to them?</p>	
3.10	<p>How does your organization know that a client completed the referral?</p>	
3.11	<p>Is there a system to follow up with a client on referral?</p> <p>IF SO, please explain how.</p>	
3.12	<p>Is there a system in place to measure and record a time lapse between when a referral was made and when a client reached the receiving provider?</p> <p>IF SO, can you please show me the record?</p>	

SECTION 3: REFERRAL SYSTEM MONITORING		
No.	QUESTION	RESPONSE
3.13	<p>Who usually follows up with a patient on referral? Describe:</p> <ol style="list-style-type: none"> 1. Referring doctor 2. Nurse 3. Public health officer 4. Case manager 5. Facility manager 6. Social worker 7. Counselor 8. Administrator 9. Other: _____ <p>PLEASE SPECIFY</p>	
3.14	<p>Are clients ever referred back to this organization or facility for follow-up after referral services are received?</p> <p>IF SO, explain the process.</p>	
3.15	<p>Are the cases that are referred back to you documented in some type of register?</p> <p>IF SO, please describe.</p> <p>OBTAIN copy of forms or registers used to record counter-referrals.</p>	
3.16	<p>Has your facility calculated a counter-referral rate for maternity referrals ?</p> <p>EXPLAIN: The counter-referral rate is the proportion of clients you refer that is received back at your facility.</p>	
3.17	<p>Is there a system to inform your facility or organization that a client has completed the referral?</p> <p>IF SO, can you please describe this system:</p> <ol style="list-style-type: none"> 1. Verbal 2. Section of referral form filled out and sent back 3. Separate counter-referral form 4. Blank slip of paper 5. Other: _____ <p>PLEASE SPECIFY</p>	

SECTION 3: REFERRAL SYSTEM MONITORING		
No.	QUESTION	RESPONSE
3.18	Does your organization obtain permission from the client to follow up with the other provider? 1. How is this done? 2. Is there a formal release of information?	
3B—ACCEPTANCE OF REFERRALS FROM OTHER PROVIDERS		
Now, I would like to ask you about referrals made to your organization from other service providers.		
3.19	Do you accept referrals from other facilities? IF NOT, SKIP TO SECTION 4.	
3.20	Please describe how other providers know about the services that are provided by your facility or organization.	
3.21	What are the services for which maternity clients are referred to your facility from elsewhere? PLEASE SPECIFY	
3.22	From where do you usually receive referrals? PROBE: Anywhere else? (Circle all that apply.) 1. Hospitals 2. Health centers 3. Clinics 4. Specialized reproductive clinics 5. NGOs 6. Community-based care 7. Faith-based organizations 8. Outreach maternity programs 9. Traditional birth attendants 10. Other: _____	

SECTION 3: REFERRAL SYSTEM MONITORING		
No.	QUESTION	RESPONSE
	PLEASE SPECIFY	
3.23	<p>Please describe the method(s) and mechanisms that are used for clients referred to you. (Circle all that apply.)</p> <p>PROBE: Are any of the following used?</p> <ol style="list-style-type: none"> 1. Client told verbally where to go 2. Client issued a standard referral form 3. Client given a piece of paper with written referral information 4. Telephone referral to your organization 5. Client is escorted 6. Other: _____ <p>PLEASE SPECIFY</p> <p>IF FORMS ARE USED: Do incoming clients bring referral forms always, often, sometimes or never?</p> <p>PROBE: Do all clients referred to you bring the same referral form?</p> <p>OBTAIN copy of Client Referral Form(s) received. NOTE: IF THE CLIENT REFERRAL FORMS RECEIVED ARE THE SAME AS THOSE USED TO REFER</p>	
3.24	<p>Please describe what information the client referred to you usually brings.</p> <p>PROBE: Anything else?</p> <ol style="list-style-type: none"> 1. Name of the referring provider, including provider's location, address, phone number 2. Name of receiving organization, including location, address, phone number 3. Information about the type of service given to the client at the original provider 4. Diagnosis 5. Reason for referral 6. Date of referral 7. Instruction on how to follow up with referring institution 	
3.25	<p>What do you think about these referral methods? Are they effective? Why or why not? How would you improve them?</p>	

SECTION 3: REFERRAL SYSTEM MONITORING		
No.	QUESTION	RESPONSE
3.26	<p>What information does your facility or organization record for clients that have been referred to your facility?</p> <p>PROBE: Do you record the following?</p> <ol style="list-style-type: none"> 1. Name of the referring provider, including provider's location, address, phone number 2. Original diagnosis 3. Reason for referral 4. Information about the type of service given to the client at the original provider 5. Date of referral 6. Date service was provided 7. Date client referred back to original service provider 8. Other: _____ PLEASE SPECIFY 	
3.27	<p>Do you refer the client back to the originating service?</p> <p>IF SO, please describe the process.</p>	
3.28	<p>What information do you send back with the client? Do you have specific forms you use for this purpose?</p> <p>IF NO FORMS, please describe how the information is sent back.</p> <p>OBTAIN copy of forms used to counter-</p>	
3.29	<p>Do you contact the originating service directly?</p> <p>IF SO, how? What information do you provide?</p>	

SECTION 4: REFERRAL SYSTEM PROCESSES		
No.	QUESTION	RESPONSE
4A: REFERRAL PROTOCOLS		
4.1	<p>Are there documented referral protocols or guidelines for maternity related services?</p> <p>IF SO, for which services?</p> <ol style="list-style-type: none"> 1. Emergency Obstetric services 2. Emergency neonatal services 3. Other: _____ PLEASE SPECIFY <p>OBTAIN copy of referral protocols</p>	
4.2	<p>IF REFERRAL GUIDELINES EXIST: Are these guidelines specific to maternity referral process adapted to the national health system, or international?</p> <p>Please describe</p>	
4.3	<p>Has there been training of providers on referral protocols?</p> <p>IF SO, please describe the training: What did it cover? When did it occur? Who participated in the training? Was it effective? Has there been follow-up or refresher training?</p>	
4B: DATA QUALITY AND USE		
4.4	<p>Is there any mechanism to ensure the accuracy of recorded information on referral initiation and completion?</p> <p>IF NO. SKIP TO 4.7</p>	

SECTION 4: REFERRAL SYSTEM PROCESSES		
No.	QUESTION	RESPONSE
4.5	<p>Can you describe the process of ensuring quality of the data gathered on referrals?</p> <p>PROBE: Are any of the following used?</p> <ol style="list-style-type: none"> 1. Regular supervision 2. Periodic audits (i.e., DQA) 3. Other mechanism <p>PROMPT FOR DETAILED DESCRIPTION.</p> <p>OBTAIN documents related to data quality checks (reports, feedback,</p>	
4.6	<p>When was the last time a data quality check was undertaken?</p>	
4.7	<p>Have any actions or improvements followed from data quality checks of referral information?</p> <p>IF SO, please describe.</p> <p>PROBE: Were any other changes made?</p>	
4.8	<p>How much time is taken from you or your staff to document, report, and analyze referral data?</p> <p>Do you feel this is burdensome?</p>	<p>Document:</p> <p>Report:</p> <p>Analyze:</p>
4.9	<p>Does anyone analyze referral data?</p> <p>IF SO, how often are data compiled and in what form?</p> <p>Who compiles and uses these data?</p> <p>For what purpose(s)? Can you give us any examples of decisions made based on these data?</p> <p>IF NO DATA ARE ANALYZED, can</p>	
4.10	<p>Has your facility or organization calculated a referral rate and/or referral compliance rate?</p> <p>IF SO, how often? Where is it recorded? Who is it reported to?</p>	

SECTION 4: REFERRAL SYSTEM PROCESSES		
No.	QUESTION	RESPONSE
4.11	<p>Are referral data reported to anyone in your organization or elsewhere?</p> <p>IF SO, describe what information is reported.</p> <p>Who receives this information?</p> <p>How often do they receive it?</p> <p>OBTAIN copy of reporting forms and</p>	
4.12	<p>Do you think data on referrals would be helpful to providers and program managers?</p> <p><i>Why or why not?</i></p>	
4.13	<p>Are the data on referrals ever discussed?</p> <p><i>How often? By Whom?</i></p>	
4.14	<p>What is the content of these discussions?</p> <p>Were any programmatic or clinical changes made based on these</p>	
4.15	<p>Has the referral system ever been evaluated?</p> <p>IF SO, when was the last time? Who</p>	
4.16	<p>Have you ever seen a copy of the evaluation report?</p> <p>IF NOT, were you informed of the evaluation results? Please describe how</p>	
4C: CLIENT CONFIDENTIALITY AND SATISFACTION		
4.17	<p>Is the name of a client or other <u>identifying</u> information recorded in registers for referral?</p> <p>IF SO, what other information, besides name, is recorded? (For example,</p>	
4.18	<p>Is the name of a client or other identifying information recorded in any reports about a referral?</p> <p>IF SO, what other information, besides</p>	

SECTION 4: REFERRAL SYSTEM PROCESSES		
No.	QUESTION	RESPONSE
4.19	<p>Are there any considerations made to ensure client confidentiality?</p> <p>IF SO, please describe.</p> <p>PROBE: How do you prevent a client's personal information from being known?</p>	
4.20	<p>Do you have any concerns about the maintenance of confidentiality within the information and/or referral tracking systems?</p> <p>IF SO, what? What could be done to improve maintenance of confidentiality?</p>	
4.21	<p>Is there a system to record referral outcomes for the patients who were referred out?</p> <p>IF SO, please explain in detail.</p>	
4.22	<p>Do providers regularly ask clients what they think about the referral process?</p> <ol style="list-style-type: none"> 1. Was it what they wanted? 2. Did it address their concerns such as stigma? 3. Is it feasible—Cost, transport, hours? 	
4.23	<p>Is there a standard way to assess clients' satisfaction with the referral process?</p> <p>IF SO, OBTAIN copy of the questionnaire or form.</p>	
4.24	<p>On the basis of your opinion or survey results, what would be the main reasons for client dissatisfaction with the referral process?</p> <p>PROBE: Any other reasons clients may not be satisfied?</p>	
4.25	<p>What are other barriers that prevent clients from completing the referral process?</p> <p>PROBE: Any other barriers?</p>	
4.26	<p>What are the main barriers that prevent clients from completing the counter-referral process?</p> <p>PROBE: Any other barriers?</p>	

SECTION 5: RESPONDENT RECOMMENDATIONS		
No.	QUESTION	RESPONSE
I have a few final questions to hear your recommendations on how the referral system and its monitoring can be improved.		
5.1	<p>Do you have any recommendations on how the referral system could be improved?</p> <p>IF SO, could you please tell me?</p> <p>PROBE: Do you have other suggestions?</p>	
5.2	<p>Do you have any recommendations on how the monitoring of referrals could be improved?</p> <p>IF SO, could you please tell me?</p> <p>PROBE: Do you have other suggestions?</p>	
5.3	<p>Do you have any other comments that you would like to make that we have not already covered?</p>	
Thank you very much for your time and cooperation.		

Appendix II: Key Informant Interview Questionnaire**QUESTIONNAIRE FOR KEY INFORMANT INTERVIEWS APPLICABLE IN
BOTH REFERRING AND RECEIVING FACILITY****NAME OF FACILITY**_____**TIER**_____**QUESTIONS**

- 1) Are there any referral protocols to guide the maternity referral process? If yes, how many are familiar with it? Are these guidelines present in the department for involved staff to review?

- 2) Are there trainings conducted on referral process? If yes, how many of you have undergone that training and when was the last training?

- 3) Is there a referral coordinator within the hospital? What are his/ her responsibilities?

- 4) What are the most common types of delay you experience? How do you suppose they can be reduced?
 - a) Delay 1(delay in deciding to seek medical care)
 - b) Delay 2(delay in reaching a health facility)
 - c) Delay 3(delay in receiving appropriate treatment on reaching the health facility)

- 5) How do you coordinate the referral process? Do you collaborate with other sectors within the county? If yes, which ones and how?

- 6) What challenges do you face during the referral process in general i.e. as a receiving/ referring facility?

- 7) Is there a well functioning health information system in place to coordinate, track and monitor maternity referrals?

- 8) Which parts of the maternity referral system would benefit from improvement to increase efficiency and increase coverage?

- 9) What are your recommendations to improve the maternity referral system?

Appendix IV: Informed Consent Form

Study Title: Assessment of the maternity referral system in Uasin Gishu County, Kenya.

INTRODUCTION

Hello my name is.....from.....and am conducting a study on Maternal and Newborn Health. The study has been approved by the Institutional Research Ethics Committee (IREC) of Moi University.

You have been identified as an informant for this study. The study is about Assessment of the maternity referral system in Uasin Gishu County, Kenya in order to improve delivery of services. If you agree to take part in this study, you will be asked questions about yourself, your experiences. This interview will take about 30-60 minutes of your time. You will not be paid money by taking part in this study.

This interview is not expected to cause any harm but if you feel uncomfortable with some of the questions, you can choose not to answer any question. You can also decide not to continue with the interview

Your responses will be private and confidential. Your name or anything that can be used to identify you will not be written on the records. The information will only be used for the study

Your participation is voluntary and you have the right to stop the interview at any time.

Please sign put your left thumb print below to agree to participate in the study


Signature.....Date.....

OR LEFT THUMB PRINT


Witness

name.....Signature.....Date.....

Appendix V: Ethical Approval



MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 334711/2/3




MOI UNIVERSITY
SCHOOL OF MEDICINE
P.O. BOX 4606
ELDORET

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

Reference: IREC/2016/32
Approval Number: 0001746

26th September, 2016

Dr. Neema Ali Mohamed,
Moi University,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.



Dear Dr. Neema,

RE: FORMAL APPROVAL

The Institutional Research and Ethics Committee has reviewed your research proposal titled:-

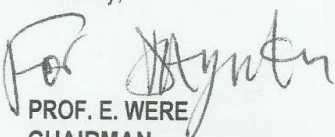
"Assessment of the Maternity Referral System in Uasin Gishu County".

Your proposal has been granted a Formal Approval Number: **FAN: IREC 1746** on 26th September, 2016. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; it will thus expire on 25th September, 2017. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date.

You are required to submit progress report(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

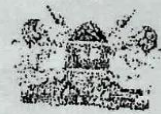
Sincerely,



PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc CEO - MTRH Dean - SOP Dean - SOM
 Principal - CHS Dean - SON Dean - SOD

Appendix VI: Ziwa-Sirikwa Sub District Hospital Referral Form


ZIWA - SIRIKKWA SUB DISTRICT HOSPITAL

REFERRAL FORM

TO... NUMBER BABY AIR

Dear _____

I am referring _____ aged... 24

Obstetric History Para... C/P Last Delivery... LMP 2/2/2016 ED

Gestation... 38/40

Presented on (date/time):... 21/4/2017

With a history of... HAZARDOUS TO THE MOTHER

On Examination... P.A. 1/2/3/4 NO NO NO

Done _____

Reason for referral _____

Thank you

Facility _____ Name Printed _____ Signature _____

Date and Time 7.1.4.2017 _____

Tear off here and send back to referring provider with escort or relative

To... _____ Date and time... _____

Facility... _____

Thank you for referring _____

O/E _____

Diagnosis _____

Done _____

Thank you _____

Appendix VII: MTRH Referral Form

Thuruma Sub County Hospital

MOI TEACHING AND REFERRAL HOSPITAL

PATIENT REFERRAL FORM

DATE OF PHONE CALL..... TIME.....

CALLED BY..... DESIGN.....

CALL RECEIVED BY..... DESIGN.....

Name of referring hospital / facility..... *THURUMA SUB COUNTY HOSP.*

Name of patient..... *Bah Shua*..... OPD.NO..... DOB..... *02/04/17*

Provisional diagnosis..... *Prematurity*

Reason for referral
For further mgmt of Prematurity

Previous management of patient (Include investigations and results)

.....

.....

.....

Name of referring clinician..... Design..... sign.....

Name of accompanying nurse..... *Samira d. Mungu*..... Design..... *Kpettn*..... sign..... *[Signature]*

Condition of patient on arrival

Temp..... Pulse..... Resp..... Blood pressure..... SPO2.....

.....

Name of receiving Nurse..... Design..... Sign.....

Patient management while in outpatient (including drugs administered and requested investigations)

.....

.....

Patient Admitted to:..... IP

NO:.....

Nursing handing Over..... Sign..... Date..... Time.....

Admitting Nurse..... Sign..... Date..... Time.....

Appendix VIII: Turbo Sub County Hospital Referral Form

TURBO SUB COUNTY HOSPITAL
PATIENT REFERRAL FORM

DATE OF PHONE CALL..... TIME.....
CALLED BY..... DESIGN.....
CALL RECEIVED BY..... DESIGN.....

Name of referring hospital / facility.....

Name of patient..... OPD. NO..... DOB.....
Provisional diagnosis.....

Reason for referral
.....
.....

Previous management of patient (Include investigations and results)
.....
.....
.....
.....

Name of referring clinician..... Design..... Sign.....
Name of accompanying nurse..... Design..... Sign.....

Condition of patient on arrival
Temp..... Pulse..... Resp..... Blood Pressure..... SPO2.....
.....
.....


Name of receiving nurse..... Design..... Sign.....

Patient management while in outpatient (including drugs administered and requested investigations)
.....
.....
.....
.....

Patient admitted to:..... IP No.....
Nurse Handing over..... Sign..... Date..... Time.....
Admitting Nurse..... Sign..... Date..... Time.....

Appendix IX: Maternity Referral Form

Burnt Forest



Telephone: 0701738332
 Email: burntforestsdh@yahoo.com
 When replying please quote

Burnt Forest Sub County Hospi
 P.o Box
 Burnt Fo

MINISTRY OF HEALTH

MATERNITY REFFERAL FORM

Name

Age

N.O.K.

Contact

Residents

L.M.P E.D.D

Para gravida

D.O.A D.O.R Time

Management before refferal

.....

Investigation done

.....

Reason for refferal

.....

Reffered by
 Accompanied by

Person informed in refferal facility

..... Time