

**Factors associated with the uptake of prevention of mother to child transmission services among women attending antenatal clinic at coast province general hospital**

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## DECLARATION

This is my original work and has not been presented for a degree in any other university.

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## **DEDICATION**

I dedicate this thesis to my wife Lillian Wangui Chege for her love of education, my lovely daughter Jasmine Nduta Adam, my mother Mrs. Cecilia Nduta Wainaina, and my sister Ms. Stella Adam, for their love, support and encouragement during this study.

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## **LIST OF ABBREVIATIONS**

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ARV	Antiretroviral
CDC	Centre for Disease Prevention and Control
CPGH	Coast Provincial General Hospital
HIV	Human Immunodeficiency Virus
MOH	Ministry of Health
MSM	Men having Sex with Men
PMTCT	Prevention of mother-to-child transmission
TBA	Traditional Birth Attendants
WHO	World Health Organization

## ABSTRACT

HIV prevalence stands at 9.0% among pregnant women which translates to an annual estimate of 110,000 pregnancies among women living with HIV. This figure ranks Kenya fourth out of the twenty countries with the highest burden of maternal HIV globally. Despite the improvements in HIV testing and provision of maternal ARV, Kenya continues to face challenges in assuring that all women in need of PMTCT services receive the full package of PMTCT interventions that span the continuum of antenatal, intra-partum and postnatal care.

The objective of this study was to determine factors that are associated with the uptake of PMTCT services at the antenatal clinic in Coast Province General Hospital, Mombasa County.

This was a cross-sectional study focusing on pregnant women (n=196) who had already enrolled for PMTCT at the antenatal clinic in Coast Provincial General Hospital (CPGH), Mombasa County Kenya. Descriptive results were reported for all variables while the association between the main outcome (first PMTCT visit) and explanatory variables was explored using a *chi-square* test; further bi-variate analyses between the outcome and all the covariates were carried out to test for the magnitude of associations using logistic regression. Data was collected using questionnaires and was entered, cleaned and analyzed using SPSS version 16.0.

A total of 199 women were interviewed after the PMTCT visit and they had a mean age of 30 (SD=5) years. About 75% (149) of these were seeking PMTCT services at the CPGH for the first time, while 71% knew of their HIV status in CPGH. About 95% of the patients were satisfied with privacy provided during testing and the provider-client interaction during testing. Clients who had never delivered in CPGH in the past had a significantly ( $p<0.001$ ) increased odds of utilizing PMTCT by 6 times (OR 6.26; 95% CI 3.09 -12.68) compared to clients who had previously delivered in CPGH. Further clients who had never lost a pregnancy in CPGH and were in the hospital for the first time were 3 times (OR 3.37; 95% CI 1.42 – 8.00) likely to seek PMTCT services in CPGH compared to

those who had lost a pregnancy in CPGH. There was a significant association (OR 5.71; 95% CI 2.14 – 15.22). p value <0.001) between family planning use before pregnancy and first PMTCT visit with a 6 times (OR 5.71; 95% CI 2.14 – 15.22) increased odds of not using FP services if utilizing PMTCT services for the first time in CPGH with use of FP before pregnancy as the reference group. Over 90% of the clients reported satisfaction with counselling services, the way queries were addressed and the degree of privacy provided.

Clients seeking PMTCT services reported positive experiences and good provider – client relationship. Patients who had not sought reproductive services (delivery, post-abortal care) were more likely to seek for PMTCT services at CPGH, therefore for a successful PMTCT program in CPGH attention needs to paid to the patient experiences as they seek other reproductive services.

## **CHAPTER ONE:**

### **INTRODUCTION**

#### **1.0 Background Information**

There are several high profile events of the last decade that have served as catalysts for the now widely available prevention of mother-to-child transmission of HIV (PMTCT) services. In developing countries, these include HIV testing and counselling, maternal and infant antiretroviral (ARV) drug regimens, safe obstetrics practices and infant feeding as well as family planning counselling. In 2000, the 13<sup>th</sup> International AIDS Conference held in Durban, South Africa, steered the way towards “breaking the silence” on, among other issues, the unequal access to HIV/AIDS treatment and care between rich and poor countries (Sidley, 2000; WHO, 2002a). At that conference, researchers presented findings showing that Viramune (nevirapine), an inexpensive, easy-to-administer antiretroviral (ARV) prophylactic drug, could be effective in lowering vertical, that is, mother-to-child HIV transmission in resource limited countries (Clarke, *et al.*, 2001). The hope for reduction of pediatric HIV infection in the developing world using these findings was further bolstered by an announcement by Boehringer Ingelheim, of its willingness to donate the drug for free for five years to poor countries (Boehringer Ingelheim, 2004).

In Sub-Saharan Africa, the region of the world which bears two-thirds of the 33 million people living with HIV, and where 90% of all global cases of vertical HIV transmission occur (UNAIDS, 2009), has been a primary beneficiary of PMTCT expansion despite these potential benefits. The expected expansion of PMTCT services on the Sub-continent has however, been faced with less than satisfactory utilization. Use of services such as facility delivery and postnatal prophylactic ARV is reported to be between 20% and 47% in many settings (Moth *et al.*, 2005). Despite these low levels of service uptake, there have been limited studies attempting to document reasons for underuse of PMTCT services. Some of these studies were

conducted as part of clinical trials or pilot programs in highly controlled environments where patients may even have received incentives to follow through with care and thus it is likely that the uptake of PMTCT services in regular clinical settings is even lower. Yet in spite of the presumed lower rates, the reasons why patients may not utilize PMTCT interventions in the current context of scaled-up services remain largely unknown (Moth *et al.*, 2005).

In Kenya, interventions to reduce PMTCT are integrated in Maternal and Child Health (MCH) services in health service delivery institutions. These also include HIV testing during ANC attendance to identify pregnant women living with HIV, maternal and infant antiretroviral treatment, safe obstetrical care, infant feeding counselling and support, and family planning services to delay future pregnancies or prevent unintended pregnancies (NACC, 2010). Kenya launched its PMTCT program in 2000, but only modest expansion of PMTCT services occurred in the first three years that followed (NASCOP, 2009). From 2003, however, scale up of PMTCT services accelerated across the country, a trend that has continued in recent years and resulted in remarkable progress in the area of antenatal HIV testing and administration of maternal ARV prophylaxis. In 2008, for example, 65% of pregnant women who attended ANC services were tested for HIV (WHO, UNAIDS & UNICEF, 2009), a rise from 32% in 2005 (WHO, UNAIDS & UNICEF, 2007). Similarly, in 2008, 56% of pregnant women living with HIV received ARV medication for PMTCT (WHO, UNAIDS & UNICEF, 2009), compared to only 20% in 2005 (WHO, UNAIDS & UNICEF, 2007).

### **1.1 Statement of the problem**

In Eastern Africa, Kenya with HIV prevalence of 7.4% has the highest HIV prevalence in the region compared to its neighbours Uganda (6.4%), Tanzania (5.7%), Burundi (3.0%), Rwanda (3.0%), and Ethiopia (1.5%) (UNAIDS, 2009). According to the Kenya Aids Indicator Survey (KAIS) conducted in 2007, women in the country had higher HIV prevalence (8.4%) than men (5.4%), with younger women aged between 15-24 years being four times more likely to be infected with



HIV (5.4%) than their male counterparts (1.6%) (NASCO, 2009). According to this report, HIV prevalence stands at 9.0% among pregnant women which translates to an annual estimate of 10,000 pregnancies among women living with HIV (WHO, UNAIDS & UNICEF, 2009). This figure ranks Kenya fourth out of the twenty countries with the highest burden of maternal HIV globally (WHO, UNAIDS & UNICEF, 2009). Despite the availability of effective interventions to prevent virus transmission from an HIV-infected woman to her child, a substantial number of infants born to Kenyan women are infected. Successful implementation of prevention of mother-to-child transmission of HIV (PMTCT) interventions requires identifying women with HIV during pregnancy and delivery of antiretrovirals (ARVs) to mothers and infants. However, in sub-Saharan Africa where most infant infections occur, PMTCT efforts are hampered by low prenatal HIV testing and ARV utilization (Service delivery dynamics) hence poor PMTCT uptake. Defining barriers to PMTCT utilization is therefore important in designing effective PMTCT programs.

## **1.2 Justification**

Despite the improvements in HIV testing and provision of maternal ARV, Kenya continues to face challenges in assuring that all women in need of PMTCT services receive the full package of PMTCT interventions that span the continuum of antenatal, intra-partum and postnatal care. In this regard, childbirth outside of a health care setting has been identified as a major challenge in PMTCT programming (NACC, 2010). Though mothers considered PMTCT important, majority are not utilizing the PMTCT services. From this study, information was obtained on factors that influence the uptake of PMTCT services at the antenatal level. This will help stress on the importance of proper service delivery which includes HIV testing and counselling, ARV administration, counselling and support on family planning and breastfeeding practices. This will help in raising awareness on the care, treatment and support services for HIV positive pregnant women and hence improve on the uptake of PMTCT services among pregnant women. The study was carried out in

Coast province with a high prevalence of HIV (8%) at CPGH which is the main referral hospital in Coast Province that serves over 2 million clientele.

### **1.3 Research Questions**

1. What is the PMTCT knowledge of mothers during uptake of PMTCT services at Coast Province General Hospital?
2. What are the experiences of the health care setting during PMTCT uptake for women taking up the PMTCT services at Coast Province General Hospital?
3. What is the provider-patient relationship for women taking up PMTCT services at Coast Province General Hospital?

### **1.4 Objectives**

#### **1.4.1 General Objective**

To determine factors associated with the uptake of PMTCT services among women attending antenatal clinic in Coast Province General Hospital, Mombasa County, Kenya.

#### **1.4.2 Specific Objectives**

1. To determine the knowledge of mothers on the available PMTCT services at the antenatal clinic in Coast Province General Hospital.
2. To determine the patients experience of the care environment during PMTCT uptake at the antenatal clinic in Coast Province General Hospital.
3. To determine the patient-provider relationship during PMTCT uptake at the antenatal clinic in Coast Province General Hospital.

### **1.5 Study limitations**

The study was carried out in only one institution - CPGH a referral hospital and therefore limits the generalizability of these findings to a similar health care setting. The study also focussed only at the point of entry of patients into the PMTCT program however the success of PMTCT services is in the compliance to these

services and adherence to ARV administration which was not explored due to the scope of the study.

## CHAPTER TWO:

### LITERATURE REVIEW

#### 2.0 Introduction

Human immunodeficiency virus (HIV) is a blood-borne virus typically transmitted via sexual intercourse, shared intravenous drug paraphernalia, and mother-to-child transmission (MTCT), which can occur during the birth process or during breastfeeding. HIV disease is caused by infection with HIV-1 or HIV-2, which are retroviruses in the Retroviridae family, *Lentivirus genus* (Nicholas & Shelley *et al.*, 2012).

Kenya has the fourth-largest HIV epidemic in the world. In 2012, an estimated 1.6 million people were living with HIV, and roughly 57,000 people died from AIDS-related illnesses (UNAIDS 2013). Moreover, there are now 1.1 million orphans to the epidemic (USAID, 2013)

The mother-to-child transmission (MTCT) of HIV refers to the transmission of HIV from an HIV-positive woman to her child during pregnancy, labour, delivery or breastfeeding. MTCT is by far the most common way that children become infected with HIV (90%) (Creek, 2009).

Effective PMTCT programmes require women and their infants to receive a cascade of interventions including uptake of antenatal services and HIV testing during pregnancy, use of antiretroviral treatment (ART) by pregnant women living with HIV, safe childbirth practices and appropriate infant feeding, uptake of infant HIV testing and other post-natal healthcare services (Padian, 2011)

Scaling up PMTCT services in the country is crucial for Kenya to eliminate mother-to-child transmission by 2015, as recently called for by the Joint United Nations Programme on HIV/AIDS. The implementation of current PMTCT guidelines, however, faces certain barriers that would also challenge scale-up. A recent review

of the implementation of Kenya's PMTCT guidelines found that although certain aspects of PMTCT services, such as counselling and ART, had achieved reasonable coverage, other aspects such as disease staging had more limited coverage (Musalia *et al.*, 2012).

Although the development of national guidelines is one strategy to increase the effectiveness of PMTCT services offered by healthcare providers, inconsistent implementation of guidelines in low income countries could be a hindrance to PMTCT services (MOH, Kenya, 2012).

## **2.1 Overview of PMTCT Services**

The primary mode of HIV acquisition in children worldwide is through mother-to-child transmission (MTCT) during pregnancy, childbirth, or breastfeeding. Before the development of effective interventions to reduce MTCT of HIV infection, estimated transmission rates were 15%–25% among non-breast feeding populations in North America and Europe and 25%–40% among breastfeeding populations in resource-limited countries (DeCock & Fowler *et al.*, 2011)

In 2010, around 390,000 children under 15 became infected with HIV, mainly through mother-to-child transmission (WHO, 2014). About 90% of children living with HIV reside in sub-Saharan Africa where, in the context of a high child mortality rate, AIDS accounts for 8 percent of all under-five deaths in the region (Padian, 2011)

In high income countries MTCT has been virtually eliminated thanks to effective voluntary testing and counselling, access to antiretroviral therapy, safe delivery practices, and the widespread availability and safe use of breast-milk substitutes (WHO, 2010). If these interventions were used worldwide, they could save the lives of thousands of children each year.

Effective PMTCT requires a three-fold strategy; (1) preventing HIV infection among prospective parents by making HIV testing and other prevention interventions

available in the populace (2) avoiding unwanted pregnancies among HIV positive women by providing appropriate counselling on contraception and (3) the use of prophylactic antiretroviral during pregnancy as well as other interventions aimed at reducing the risk of vertical transmission (WHO, 2012)

## **2.2 Antiretroviral drugs**

Antiretroviral drugs are used in PMTCT both for the HIV positive mother and her baby. Women who have reached the advanced stages of HIV disease require a combination of antiretroviral drugs for their own health. This treatment, which must be taken every day for the rest of a woman's life, is also highly effective at preventing mother-to-child transmission (PMTCT). Women who require treatment will usually be advised to take it, beginning either immediately or after the first trimester. Their newborn babies will usually be given a course of treatment for the first few days or weeks of life, to lower the risk even further (Cairns, 2010).

The simplest of all PMTCT drug regimens was tested in the HIVNET 012 trial, which took place in Uganda between 1997 and 1999. This study found that a single dose of Nevirapine given to the mother at the onset of labor and to the baby after delivery roughly halved the rate of HIV transmission (Cairns, 2010). As it is given only once to the mother and baby, single dose Nevirapine is relatively cheap and easy to administer. Since 2000, many thousands of babies in resource-poor countries have benefited from this simple intervention, which has been the mainstay of many PMTCT programs.

So as to address the challenge of resource limitation, WHO drafted guidelines on PMTCT drug regimens that highlight the importance of administering HIV drugs and the various stages of administration (Table 2.1). This incorporates the initiative of providing free drugs in resource limited settings. These guidelines provide various options for consideration as per the 2010 recommendations. This however was after

a review of the previous 2006 recommendations which addressed the issue of drug resistance.

**Table 2.1: WHO guidelines for PMTCT drug regimens in resource-limited settings**

	Pregnancy	Labour	After birth:	After Birth:
2010 recommendations Option A	AZT after 14 weeks	Single dose Nevirapine; AZT+3TC	AZT+3TC for seven days	Daily NVP until 1 week after breastfeeding has
2010 recommendations Option B	Triple ARVs after 14 weeks	Triple ARVs	Triple ARVs until 1 week after breastfeeding has	6 weeks of daily NVP
2006 recommendations	AZT after 28 weeks	single dose Nevirapine; AZT+3TC	AZT+3TC for seven days	Single dose Nevirapine; AZT for seven days
Alternative (higher risk of drug	AZT after 28 weeks	single dose Nevirapine	-	Single dose Nevirapine; AZT
Minimum (less effective)	-	single dose Nevirapine;	AZT+3TC for seven days	Single dose Nevirapine
Minimum (less effective; higher risk of drug resistance)	-	Single dose Nevirapine	-	Single dose Nevirapine

**(WHO, 2008)**

**Key: AZT: Azidothymidine TC: lamivudine NVP: Nevirapine**

Very recently, UNAIDS strongly acknowledged results from scientific trials presented at the 2015 Conference on Retroviruses and Opportunistic Infections (CROI), held in Seattle, United States of America. Two studies demonstrate that the antiretroviral medicines tenofovir and emtricitabine when used as pre-exposure prophylaxis (PrEP) are 86% effective in preventing new HIV infections among men who have sex with men (UNAIDS, 2015).



A third study showed 96% efficacy in preventing new HIV infections when the HIV-negative person in a serodiscordant couple had access to PrEP and the HIV-positive partner had access to antiretroviral therapy (UNAIDS, 2015). These new results are a significant breakthrough in] advancing efforts to provide effective HIV prevention options to men who have sex with men and to serodiscordant couples (UNAIDS, 2015)

### **2.3 PMTCT in Africa**

In 2013, there were 24.7 million [23.5 million – 26.1 million] people living with HIV in sub-Saharan Africa and women account for 58% of the total number of people living with HIV (UNAIDS, 2014)

During the same year, there were an estimated 1.5 million (1.3 million – 1.6 million) new HIV infections in sub-Saharan Africa. This means New HIV infections declined by 33% between 2005 and 2013. (UNAIDS, 2014). The region therefore accounts for almost 70% of the global total of new HIV infections.

The finding show that 1.1 million [1.0 million – 1.3 million] people died of AIDS related causes in 2013 meaning a fall by 39% between the years 2005-2013. (UNAIDS, 2014)

In many developed countries, these steps have helped to virtually eliminate MTCT yet sub-Saharan Africa continues to be severely affected by the problem, due to a lack of drugs, services and information, and the shortage of testing facilities (WHO, 2009).

Results revealed that 67% of men and 57% of women were not receiving ART in 2013 despite a 37% treatment coverage in the African region (UNAIDS, 2014).

For MTCT, there were 210 000 (180 000 – 250 000) new HIV infections among children and this translates to a 43% decline in new HIV infections among children since 2009 (UNAIDS, 2014) The MTCT problem in Sub-Saharan Africa is particularly severe due mainly to: high birth rate (over 23 million births annually), comparatively high rates of HIV infection among women of child-bearing age (over

15% in Africa while averaging less than 3% in other regions). Large total population of women at child-bearing age (over 140 million), and a well-established HIV epidemic in the region (WHO, 2008).

In Sub-Saharan Africa, HIV infected mothers continue to pass HIV to their children at a rate of between 25-35% (WHO, 2008). This has been exacerbated by the fact that eight countries in the region have over 15% of their adult population between the ages of 15-49 infected with HIV. In seven of these countries, one of every five adults is infected with HIV with prevalence among young women is generally higher than among men. Furthermore, the annual average per capita expenditure allocation to health is 6% of all government expenditure in SS Africa with Zambia leading at 13%, Namibia at 8% while more than 10 countries allocate 3% of budget or less, to health (UNAIDS, 2012).

Sub-Saharan Africa faces many challenges when it comes to PMTCT; providing health care, antiretroviral treatment and support to a growing population of people with HIV-related illnesses, reducing the annual toll of new HIV infections by enabling individuals to protect themselves and others, as well as coping with the impact of millions of AIDS deaths on orphans and other survivors, communities, and national development (WHO, 2010)

In 2011, a Global Plan was launched to reduce the number of new HIV infections via MTCT by 90 percent by 2015 (UNICEF, 2014). Effective PMTCT programmes require women and their infants to receive a cascade of interventions including uptake of antenatal services and HIV testing during pregnancy, use of antiretroviral treatment (ART) by pregnant women living with HIV, safe childbirth practices and appropriate infant feeding, uptake of infant HIV testing and other post-natal healthcare services (Padian, 2011).

The World Health Organisation (WHO) promotes a comprehensive approach to PMTCT programmes which includes: Prevention of new HIV infections among women of childbearing age; Preventing unintended pregnancies among women living with HIV; Preventing HIV transmission from a woman living with HIV to her baby; Providing appropriate treatment, care and support to mothers living with HIV and their children and families (WHO, 2010)

Without interventions, there is a 20-45% chance that an HIV-positive mother will pass the virus on to her child (WHO, UNAIDS & UNICEF, 2009). If a woman is supplied with antiretroviral drugs, however, this risk can be significantly reduced. Before these measures can be taken the mother must be aware of her HIV infection, so testing also plays a vital role in the prevention of MTCT (Patel, 2008).

## **2. 4 HIV care and PMTCT in Resource-limited settings**

In resource-poor settings, shortages of PMTCT staff, interruptions in treatment and supplies of medical equipment, as well as a shortfall in counselling services, all act as barriers to PMTCT services. These factors often mean long waiting times for post-test counselling and many leave without getting their HIV test results. (Mutel, *et al.*, 2011) (Nuwagaba-Biribonwoha, 2007) One study from Kenya reported that 92 percent of respondents lacked privacy in their counselling rooms (Kalembo, & Zgambo, 2012).

A critical step to an effective PMTCT service is voluntary counseling and testing, enabling all pregnant women to be aware of their HIV status. Uptake of antenatal services in low and middle-income countries is high, with nearly 80% of women being seen at least once during pregnancy (Luo *et al.*, 2010), representing a valuable opportunity for the implementation of PMTCT.

It is recommended that women receive HIV counseling and testing at their antenatal booking visit, with an assessment of CD4 count and clinical staging to determine eligibility for ART for their own health, or ARV prophylaxis for PMTCT; post-delivery infants should be tested for HIV at approximately 6 weeks, and mothers and

infants followed for 2 years (WHO, 2010). Programs report a cumulative loss of women in the PMTCT cascade from initial counseling and testing to follow-up of women and children (Ginsburg *et al.*, 2011)

The WHO recommends various initiatives to improve initial testing of pregnant women with, at minimum, a rapid HIV test at approximately 20 weeks gestation (WHO, 2010).

Poor monitoring of PMTCT services by healthcare workers also leads to poor retention in care. One study from Ethiopia reported poor follow-up rates in the PMTCT programme because healthcare facilities did not have registered information on HIV-positive mothers (Merdekios, & Adedimeji, 2011).

For the prevention of mother-to-child transmission (PMTCT) of HIV-1 in resource limited settings, the World Health Organization (WHO) recommends that HIV-infected mothers receive antiretroviral therapy (ARV) and practice exclusive breastfeeding (EBF) for the first 6 months post-partum followed by complementary feeding unless environmental and social circumstances are safe for and supportive of replacement feeding (WHO, 2010)

Finally, follow-up of PMTCT participants after delivery is generally poor in operational programs, but essential to support infant feeding practices from birth to 24 months, ensure testing of all HIV-exposed children with appropriate referral of those found to be positive and follow-up of HIV-infected mothers, both those already on HAART for treatment, and those with higher CD4 counts for pre-ART care (Ginsburg *et al.*, 2007) (Manzi *et al.*, 2007).

Maternal mortality is increased in HIV-prevalent areas, with an excess of 1300 maternal deaths per 100,000 live births attributed to HIV (Ronsmans & Graham, 2008). HIV-infected mothers are also reported to suffer from increased morbidity, including respiratory infections, diarrhoea, anaemia and tuberculosis, all treatable conditions if identified and managed appropriately (Collin *et al.*, 2007).

## **2. 5 Provider-Initiated HIV Testing and Counselling (PITC)**

**Provider-Initiated HIV Testing and Counselling (PITC)** refers to HIV testing and counselling which is recommended by health care providers to persons attending health care facilities as a standard component of medical care (WHO, 2007).

In 2007, the World Health Organization issued guidelines recommending that countries and organizations adopt PITC to increase HIV testing rates. These guidelines were developed because HIV testing rates globally remained low, despite increased access to HIV treatment, care, support and prevention services, and few people living with HIV were aware of their status (WHO, 2007).

A recent review found that prior to PITC introduction, HIV testing uptake among women in antenatal care (ANC) settings ranged from 5.5%–78.7%, while after PITC introduction, uptake among this population increased by 9.9%-65.6% across studies (Hensen, *et al.*, 2012).

The aim of PITC is to decrease barriers to testing in order to increase testing rates and thereby facilitate earlier access to HIV treatment and prevention. Evidence from both low and high income countries indicates that the direct offer of HIV testing by health providers can result in significant improvements in test uptake and that the intervention is acceptable to patients and providers (Hensen, *et al.*, 2012).

There are indications that PITC may be effective in Sub-Saharan Africa, but the evidence is limited to a few studies among mainly antenatal and TB patient groups. For example, in Botswana, a significant increase was reported in antenatal patients who knew their HIV status, from 47% to 78% before and after introducing PITC, respectively (Lawn, *et al.*, 2011). In South Africa, studies using a variety of research methodologies indicate that PITC can increase HIV test uptake compared to the standard VCT approach to testing (Walensky, *et al.*, 2011). A cluster randomised trial with newly registered TB patients showed an absolute difference in HIV testing uptake at the end of the trial between the intervention and control arms of 13.7% (6.5% in control and 20.2% in intervention clinics,  $p = 0.009$ ) (Pope, *et al.*, 2009).

PITC should be accompanied by a recommended package of HIV-related prevention, treatment, care and support services. All pregnant women, except those with confirmed infection, should be tested as early as possible in each new pregnancy with repeat testing late in pregnancy recommended to HIV-negative women in generalized epidemics. As a substantial proportion of pregnant women present to health facilities at the time of labour, HIV testing and counselling should be recommended to all women of unknown HIV status in labour, or as soon as possible after delivery (UNAIDS & WHO 2009).

When recommending testing and counselling to a patient, the health care provider should at a minimum provide the patient with the following information: The reasons why HIV testing and counselling is being recommended; The clinical and prevention benefits of testing and the potential risks, such as discrimination, abandonment or violence; The services that are available in the case of either an HIV-negative and/or HIV- positive test result, including whether antiretroviral treatment is available; The fact that the test result will be treated confidentially; The fact that the patient has the right to decline the test; The fact that declining an HIV test will not affect the patient access to services; In the event of an HIV-positive test result, encouragement of disclosure to other persons who may be at risk of HIV exposure; An opportunity to ask the health care provider questions (UNAIDS & WHO 2009).

For pregnant women, this additional information should be given: The risks of transmitting HIV to the infant; Measures that can be taken to reduce mother-to-child transmission, including Antiretroviral prophylaxis and infant feeding counselling; The benefits to infants of early diagnosis of HIV; All individual undergoing HIV testing must be counselled when their test results are given regardless of the test result; Antiretroviral prophylaxis and infant feeding; Counselling must be made available as part of the standard of care for pregnant women who are diagnosed HIV-positive through PITC; For women identified as HIV-negative, immediate support must be ensured to prevent becoming infected during the course of pregnancy and breastfeeding; Women diagnosed with HIV, should be encouraged to propose HIV testing and counselling to their make partners (UNAIDS & WHO 2009).

PITC can neither be mandatory nor compulsory for its violation of the rights of the person. In this regard, WHO and UNAIDS do not support mandatory or compulsory testing of individuals on public health grounds (UNAIDS & WHO. 2009).

## **2.6 The PMTCT Situation in Kenya**

Kenya has the fourth-largest HIV epidemic in the world. In 2012, an estimated 1.6 million people were living with HIV, and roughly 57,000 people died from AIDS-related illnesses. (UNAIDS, 2013). Moreover, there are now 1.1 million orphans to the epidemic. (USAID, 2013)

Although HIV prevalence among the general population has fallen in Kenya, women continue to be disproportionately affected by the epidemic. In 2012, 6.9 percent of women were living with HIV compared with 4.2 percent of men (NASCO, 2012). Young women (aged 15-24) are almost three times likely to be living with HIV than men of the same age (3 percent and 1.1 percent respectively). However, HIV prevalence among young women has almost halved since 2003, showing that progress is being made (UNGASS, 2014).

The National HIV and AIDS Estimates Working group estimated HIV prevalence rate among people aged 15-49 to be 6.0% in 2013. Although the Spectrum results show a continued decline of HIV prevalence among adult population from late 1990s to 2008 the prevalence has since stabilized. Kenya's HIV epidemic is geographically diverse, ranging from a prevalence of 25.7 percent in Homa Bay County in Nyanza region to approximately 0.2 per cent in Wajir County in North Eastern region. These new estimates confirm a decline in HIV prevalence among both men and women at National level. Prevalence remains higher among women at 7.6% compared to men at 5.6%. (MOH Kenya, 2014)

Levels of infection among individuals in Marriage unions are high. 45% of married HIV-positive persons have a partner who is HIV-negative. (KENYA HIV Prevention Response and Modes of Transmission Analysis, 2009)

Antenatal care (ANC) utilization is high overall (92%), though >75% of women access ANC after the 3rd month (or after the point of optimal PMTCT regimen initiation). Access to skilled attendants at delivery is moderate (44%), with pronounced disparities in access between the poorest (20%) and wealthiest fifth (81%) of women (KDHS, 2008/2009).

In 2012, Kenya published revised PMTCT guidelines based on WHO guidelines published in 2010 (MOH, 2012). Based on the four-pronged approach promoted by the WHO, it focuses on primary prevention of HIV infection in women, prevention of unintended pregnancies, reducing transmission during pregnancy, labour and breastfeeding, and providing support to HIV-positive women and their families. As such, the Kenyan guidelines encourage four or more antenatal care (ANC) visits with an essential package of services that includes (but is not limited to) counselling, medical history and examination, nutritional assessment, testing for opportunistic infections including tuberculosis (TB), positive prevention counselling (including disclosure, condom use, psychosocial support for families), and an effective contraception plan (MOH, 2012).

The revised guidelines have a much greater focus on pharmaceutical prophylaxis than previous guidelines and promote earlier initiation of therapy for all pregnant women. Women who are eligible to receive ART (CD4 cell count of 350 or below with WHO clinical stage of I or II, or WHO clinical stage III or IV, regardless of CD4 cell count) should be started on highly active antiretroviral therapy (HAART) regardless of gestational age. Women not eligible for HAART should be started on combination antiretroviral (ARV) prophylaxis at 14 weeks, or shortly thereafter and receive a combination of AZT, 3TC, and NVP at the onset of labour (MOH Kenya, 2014).

There is evidence that Kenya has made progress in PMTCT as HIV incidence among children between six weeks and one year is estimated to have declined from 27% to 10-15% within five years (MOH, Kenya, 2012).



### **2.6.1 Efficiency of PMTCT services**

Kenya is committed to eliminating the mother-to-child transmission (MTCT) of HIV by 2015. Key strategies to prevent the mother-to-child transmission (PMTCT) of HIV include efforts to increase knowledge of PMTCT, greater male involvement in PMTCT, universal attendance of pregnant women at antenatal clinics, universal uptake of HIV testing among pregnant women, as well as the provision of antiretroviral drugs (ARVs). Indeed, in recent years, PMTCT efforts in Kenya have expanded rapidly (UNGASS, 2014).

From 2008 to 2013, 58,000 women annually were offered PMTCT services, out of an estimated 79,000 (76 percent coverage). Between 2010 and 2013, PMTCT coverage actually fell from 86 percent to 70 percent; however, this was due mainly to an increase in demand for PMTCT services. (UNGASS, 2014).

In 2009, the Kenyan government emphasized the importance of male involvement in PMTCT, and in 2010 started a campaign to encourage partner testing, exclusive breastfeeding and the delivery of ART to children (WHO, 2012). From 2010 to 2013, the percentage of women and their infants given ARVs during breastfeeding to prevent HIV transmission via this route increased from 65 percent to 70.6 percent. By comparison, male involvement in PMTCT remains very low in Kenya (4.5 percent) (UNGASS, 2014).

Improving the efficiency of the health sector is a growing international concern. The World Health Organization (WHO) estimates that 20%-40% of resources spent on health are wasted through inefficiency (WHO, 2010). While more resources are required to ensure that coverage of essential health services is scaled up globally, significant improvements in health could be made with existing resources if countries only improved the efficiency of their health systems (WHO, 2010).

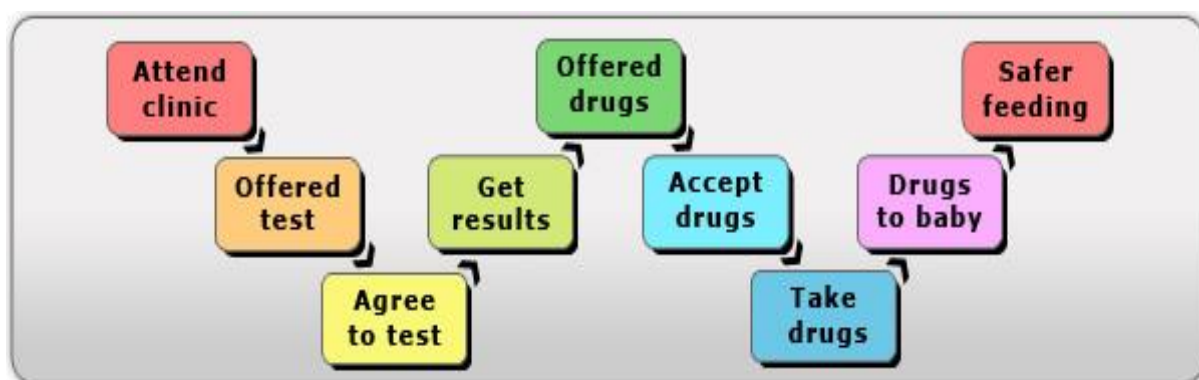
Preventing mother-to-child transmission might seem simple: just hand out lots of pills. In fact there's much more to it than that. To begin with, the majority of women in the low and middle-income countries have never been tested for HIV and thus

don't know whether they're infected. This means that effective PMTCT programs must provide counseling and testing services to determine which women need assistance (Warren *et al.*, 2010).

And even if a clinic offers counseling and testing to every pregnant woman, the reality is that not all of them would accept. Others, having been tested, fail to return to receive their results. This is just the beginning of a series of steps that leads to the ideal outcome, which is to reduce the risk of transmission as far as possible. It is evident that at each step, some women drop out and so by the end, it's possible that only a minority will remain (Warren *et al.*, 2010).

This phenomenon can be confirmed by data from pilot PMTCT programs supported by UNICEF between January 2000 and June 2002. Of more than half a million women who attended clinics in twelve countries, only 71% received counseling; of those who were counseled, only 70% took an HIV test; among women who tested HIV positive, only 49% received preventive drugs. Assuming that HIV prevalence among all women was similar to the rate among those who were tested, fewer than one in four HIV-infected women who attended a clinic went on to receive the drugs that they needed. Many other studies in very poorly resourced areas have shown that such high drop-out rates are not unusual. However, they have also found that some PMTCT programs perform much better than others. (UNICEF, 2006).

PMTCT services acquisition is a series of steps that have to be adhered to so as to improve the overall uptake of PMTCT services. This is evidenced by the figure 1.1 below which outlines these steps that capture from the first stage of attending the antenatal clinic (after confirming pregnancy) to knowing the HIV status which now requires PMTCT service delivery e.g. compliance to drugs for both mother and child. This process entails both pre and post counseling that will determine the effectiveness of accepting the status, taking drugs and take up of other PMTCT services by the mothers. (Clarke, 2000).



**Figure 2.1: Step-wise illustration of acquisition of PMTCT services (Clarke, 2000).**

### 2.6.2 Accessibility of PMTCT services

In 2011, a Global Plan was launched to reduce the number of new HIV infections via MTCT accessibility by 90 percent by 2015 (UNICEF, 2014).

In 2012, over 900,000 pregnant women living with HIV globally accessed PMTCT services - a coverage of 62 percent. Four priority countries (Botswana, Ghana, Namibia and Zambia), had achieved 90 percent PMTCT coverage (WHO, 2013).

In the same year, 58 percent of pregnant women living with HIV received ART for their own health, compared with 64 percent of all adults. In many countries, less than half of HIV-positive pregnant women with a CD4 count under 350 (the threshold for ART initiation under the 2010 WHO treatment guidelines), received ART for their own health. Indeed, HIV prevention for pregnant women varies greatly between regions with over 90 percent accessing these services in Eastern and Central Europe and the Caribbean compared to less than 20 percent in Asia and the Middle East and North Africa (MENA) (WHO, 2013).

However, the global gap in ART provision between pregnant women and all adults is closing (WHO, 2013).

Between 2001 and 2012, new HIV infections among children fell by 52 percent. However, in 2012, there were still an estimated 260,000 new HIV infections among this group (WHO, 2013).

Moreover, there is an even bigger gap in ART provision for children living with HIV. In 2012, only 34 percent of under 15s living with HIV received ART - nearly half adult ART coverage. In priority countries, only 30 percent of children received HIV treatment. Low ART coverage among children is due mainly to shortfalls in early infant diagnosis (EID) with three priority countries reporting EID coverage of less than 5 percent (WHO, 2013).

PMTCT programs need to be expanded significantly in order to meet the target of reducing new HIV infections among children by 90 percent by 2015 (WHO, 2013).

Although PMTCT services are important, access to them can be extremely difficult in sub-Saharan Africa, where social and material inequalities are repeatedly shown to have strong effects on women's use of PMTCT and maternal health interventions. In this region, use of ANC and skilled birth attendance are influenced by factors such as age, parity, education, wealth, geographical proximity to care, women's autonomy, and personal interactions with health workers (Hooseinpoor *et al.*, 2012). A similar cluster of socio-demographic, sociocultural, and health system factors has been shown to affect HIV-positive women's use of PMTCT services (Kinuthia *et al.*, 2012).

To increase attendance, clinics should aim to be as accessible as possible. Improvements might include providing travel services or changing opening hours. For example, one program in rural India boosted attendance by setting up a Saturday clinic (Samuel *et al.*, 2007).

In such contexts, the effect of women's HIV-positive status disclosure on care-seeking behavior during pregnancy and postpartum remains incompletely understood. Decisions about whether to disclose HIV-positive status are often

influenced by anticipations and experiences of HIV-related stigma, as evidenced by studies documenting women's fears of violence, abandonment, and loss of economic support as a result of this disclosure (Otieno *et al.*, 2012).

Disclosure rates to a male sexual partner in sub-Saharan Africa range from 17% to 86%, and tend to be lower for women who test for HIV in ANC settings (Medley *et al.*, 2010). Lack of disclosure to male partners can limit women's ability to receive HIV care for their own health, increase the risk for sexual transmission of HIV if the male partner is sero-status negative, and increase the likelihood of suboptimal adherence to PMTCT interventions (Jasseron *et al.*, 2013). Disclosure to and involvement of a male partner in HIV testing have been associated with higher adherence to PMTCT interventions (Kirsten I, Sewangi J, Kunz A, *et al.*, 2011) and improved infant outcomes (Aluisio *et al.*, 2012).

## **2.7 Clinic resources**

In resource-poor settings, shortages of PMTCT staff, interruptions in treatment and supplies of medical equipment, as well as a shortfall in counselling services, all act as barriers to PMTCT services. These factors often mean long waiting times for post-test counselling and many leave without getting their HIV test results. (Mutel, 2011) (Nuwagaba-Biribonwoha, 2007). One study from Kenya reported that 92 percent of respondents lacked privacy in their counselling rooms (Kalembo & Zgambo 2012).

Poor monitoring of PMTCT services by healthcare workers also leads to poor retention in care. One study from Ethiopia reported poor follow-up rates in the PMTCT programme because healthcare facilities did not have registered information on HIV-positive mothers (Merdekios & Adedimeji 2011).

Each setting will have its own specific mix of barriers to PMTCT uptake, adherence and retention that reflect prevailing behavioural norms, cultural beliefs and the policy environment. Understanding context-specific barriers is the first step to

addressing them, followed by design of interventions that are informed by the evidence base yet tailored to each setting (Thompson *et al.*, 2012).

Several evaluations have been undertaken to analyze the real world effectiveness of PMTCT programs in resource-limited settings. These have revealed substantial challenges to providing optimal PMTCT services. In a review of PMTCT programs in 21 resource limited countries sub-Saharan Africa and India that receive President's Emergency Plan for AIDS Relief (PEPFAR) funding, there was reduced uptake of effective interventions at all points of the PMTCT cascade in a number of resource-limited settings, including Cameroon, Chad, Ethiopia, and Uganda (Stringer *et al.*, 2010). This resulted in suboptimal antiretroviral delivery: less than half of HIV-infected mothers and less than one-third of HIV-exposed infants received appropriate antiretroviral interventions.

Similarly, a study to evaluate the uptake of PMTCT services in selected community facilities in South Africa, Cameroon, Zambia, and Cote d'Ivoire. It also included measurement of nevirapine in cord blood (Stringer *et al.*, 2010).

Overall, there were major gaps in all points in the cascade in the delivery of PMTCT services, including failure to test some women and failure to provide antiretroviral interventions, including single dose Nevirapine, to mothers or infants. Only 50 percent of mother-infant pairs received both infant and maternal prophylaxis. In addition, a substantial portion of women were lost to follow-up antenatally or failed to come to health centers for delivery (Stringer *et al.*, 2010).

Basic health systems issues include distance to health clinics and associated travel costs, and staffing issues, are key barriers to attendance at antenatal and ART clinics, limiting the opportunity to receive ARV drugs (WHO, 2013).

Service accessibility issues (alongside cultural traditions) also influence the place of delivery for many women, with home births presenting a barrier to receiving maternal and infant ARV drugs. Delayed first antenatal care attendance is a problem affecting timely access to ARV drugs during pregnancy. Staffing issues include a shortage of health care providers, particularly those with sufficient training, and poor

behaviour among staff, including scolding or discriminating against HIV-positive clients (WHO, 2013).

Poor referral links and tracking systems hamper linkage between antenatal and ART services. The potential of PMTCT programmes to virtually eliminate vertical transmission of HIV will remain elusive unless these barriers are tackled (WHO, 2013).

In sub-Saharan Africa models of care need to adapt to support continued scale up of antiretroviral therapy (ART) and retain millions in care. Task shifting, coupled with community participation has the potential to address the workforce gap, decongest health services, improve ART coverage, and to sustain retention of patients on ART over the long-term. (Decroo and Rasschaert *et al.*, 2013). In Uganda and Kenya community health workers or volunteers delivered ART at home (Decroo *et al.*, 2013). In Mozambique people living with HIV/AIDS (PLWHA) self-formed community-based ART groups to deliver ART in the community. (Decroo *et al.*, 2013). These examples of community ART programs made treatment more accessible and affordable.

However, to achieve success some major challenges need to be overcome: first, community programs need to be driven, owned by and embedded in the communities. Second, an enabling and supportive environment is needed to ensure that task shifting to lay staff and People Living With HIV/AIDS is effective and quality services are provided. Finally, a long term vision and commitment from national governments and international donors is required. Exploration of the cost, effectiveness, and sustainability of the different community-based ART models in different contexts will be needed (Decroo *et al.*, 2013)

## **2.8 Factors associated with low utilization of PMTCT and maternal health services**

Research that have investigated reasons for low use of PMTCT services have mainly documented economic and socio cultural factors. A national evaluation of eighteen PMTCT pilot programs in South Africa, for example, found inability to pay for

transportation costs to health care facilities to be a key impediment to patients making their PMTCT appointments (Doherty *et al.*, 2010).

Studies in Botswana report fear of domestic violence, disruption of a relationship because of a woman's HIV positive status and stigma fuelled by public use of PMTCT interventions such as infant formula as factors that prevent participation in PMTCT programs (Gaillard and Melis, *et al.*, 2002). (Kiarie and Richardson *al.*, 2006). (Eide *et al.*, 2006).

Bwirire and colleagues' study conducted in Malawi reports both economic reasons (inability to pay for transportation costs to a health facility) and socio-cultural factors (fear of discrimination, fear of household conflict) as some of the barriers to patients returning for PMTCT services (Bwirire *et al.*, 2008).

Literature on the low use of maternity services in Africa-where less than half of all deliveries occur in a health care facility-offers further insight into women's engagement in maternal health services (WHO, 2008). Although structural and resource barriers (distance to health care facility, inability to pay for transportation or delivery costs) and cultural factors such as the association of self-delivery with courage and honor are largely viewed as underpinning low use of maternity services, this literature also reports that perceptions of care contribute to delivery outside health care settings (Bazzano *et al.*, 2008).

Perceptions such as provider's negative attitude and inattention to patient's needs, low quality of care in public health sector health facilities due to lack of drugs and supplies, and that facility delivery almost always involves cesarean section (Mrisho *et al.*, 2010) hinder women's utilization of facility-based maternity services. Correspondingly, a number of studies have found perceptions of high quality of care (Kruk *et al.*, 2010), positive provider attitude and availability of supplies and equipments to be the most important attributes that guide decisions about place of delivery. There is evidence, too, linking counseling on facility delivery and birth preparedness (making concrete plans for facility delivery, for example, saving money for maternity services) with child birth at a health care facility (Mpembeni *et al.*, 2007).



The influence of service delivery dynamics on use of facility-based maternity services (for example, nature of provider-patient interactions, delivery counseling and birth planning) demonstrated in the maternity services literature, offers a useful perspective that has hitherto been largely ignored in the assessment of PMTCT service use. Only a handful of studies have documented the influence of service delivery dynamics on patient uptake or follow-through with PMTCT services.

In one study conducted in Ivory Coast, long wait periods at the health facility, negative views about the program and program staff, and lack of clarity regarding ability to continue with services after several missed appointments were some reasons reported for patient dropout from services (Otieno *et al.*, 2010).

In another study conducted in Botswana, women receiving treatment and those who declined treatment, community members and even health workers stated that the negative attitude of some health workers posed a barrier to participation in PMTCT services (Kebaabetswe, 2007). These two studies begin to illuminate the ways that service delivery dynamics shape the uptake of services, pointing to the need to explicitly examine the structures in which services are provided and the processes involved in provider-patient interactions, to fully understand the influence of the service delivery context on women's uptake of and follow-through with PMTCT services. The importance of studying the service delivery context, additionally, lies in the fact that it is a proximate site that readily lends itself to intervention.

## **2.9 Maternal Health Services**

### **2.9.1 ANC Services**

Kenya adopted WHO guidelines in 2012 that recommend the initiation of antiretroviral therapy during pregnancy and four visits to an antenatal clinic to maximize the support that can be given in order to successfully prevent HIV transmission (Lesley, 2014).

The Kenyan guidelines encourage four or more antenatal care (ANC) visits with an essential package of services that includes (but is not limited to) counselling, medical history and examination, nutritional assessment, testing for opportunistic infections

including tuberculosis (TB), positive prevention counselling (including disclosure, condom use, psychosocial support for families), and an effective contraception plan (PMTCT Guidelines, 2012).

All pregnant women should be encouraged to learn their HIV infection status, as well as that of their sexual partners. Only by knowing one's HIV status can the health workers make appropriate health care management recommendations and the couple make appropriate decisions about maintaining their health and that of their unborn baby. Pre-conception care is encouraged where an opportunity arises and a birth plan is discussed with the pregnant woman (PMTCT Guidelines, 2012).

HIV testing and counselling in pregnancy should be guided by the following; All pregnant women of unknown HIV status should be offered opt-out testing at the first ANC visit; Repeat HIV testing (After 3 months) in the third trimester should be offered to all women whose first antenatal test was performed before 28 weeks gestation; Women who decline HIV testing at the first antenatal visit should have follow up counseling at subsequent visits, and offered HIV testing; Women presenting in labor without documented HIV testing should have opt-out testing done urgently; All facilities providing antenatal and maternity care must have capability for providing HIV testing at all hours of operation; Postnatal HIV counseling and testing should be offered to all women with unknown HIV status (PMTCT guidelines, 2012).

### **2.9.2 Delivery**

Childbirth (also called labor and delivery) is the process of giving birth. A pregnant woman with HIV can pass HIV to her baby at any time during pregnancy, including during childbirth. The risk of mother-to-child transmission of HIV is greatest during delivery when a baby passes through the birth canal and is exposed to any HIV in an HIV-infected mother's blood or other fluids. (UNICEF, 2010).

During labour and delivery Women on antiretroviral prophylaxis are given AZT at 3 hour intervals and a single dose of Nevirapine (NVP). Women on ART continue to take ART throughout pregnancy and labour and delivery as normal. Transmission of HIV from mother to infant during delivery and labour is increased by prolonged rupture of membranes (prolonged bleeding), instruments being used to assist in delivery, episiotomy (surgically cutting the area between the vulva and the anus to prevent tearing) and prematurity. (USAID, 2013).

As early as 14 weeks, the HIV positive pregnant woman should be put on AZT and counselled on adherence . They should be encouraged to come for a minimum of four ANC visits and deliver in the health facility. The woman takes AZT 300mg bd from first contact, 600mg AZT and sdNVP 200mg at onset of labour, and AZT 300mg/3TC 150mg BD for 7 days after delivery. At first contact, HIV infected pregnant women after 38 weeks should be given sdNVP tablets to take home with them. They should be instructed to take the tablets at the onset of labour, if labour occurs outside health facility settings. They should also be given NVP,syrup for their babies to be administered from birth. When single dose NVP (sdNVP) is used in PMTCT, some women and children may develop resistance to NVP that may limit future use of Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs) to treat them. If an HIV positive mother has previous exposure to sd NVP, she should not be put on a NNRTI based regimen until 12 months have elapsed...If single dose NVP is used, AZT /3TC should be given for 7 days to cover the NVP tail in the mother. The baby is then continued on NVP until one week after cessation of breastfeeding (PMTCT Guidelines 2012, MOH 2014).

Elective caesarean section (CS) reduces the risk of HIV MTCT as compared to vaginal delivery if the viral load is >1000 copies per ml, but may not be available in many settings. Where CS is performed (elective or emergency) in HIV positive women, prophylactic antibiotics should be administered. If the CS is performed after prolonged labour or rupture of membranes, full courses of antibiotics should be prescribed. Although elective CS will not be available in most health facilities for PMTCT, there may be some cases that merit consideration for CS. These include pregnancies where labour is expected to be prolonged or where other obstetric

complications may be associated with increased risk of transmission (e.g. abruptio placentae, placenta praevia, pre-term rupture of membranes, previous CS, and breech presentation). (PMTCT Guidelines, 2012).

Emotional support during labour is important for all women, more so for a HIV positive woman who is concerned about her condition and risk of HIV transmission to her child. Whenever possible, during labour, ward staff must be sensitive to the fears and concerns of the HIV positive mother about her infection, and issues of disclosure to her partner (PMTCT Guidelines, 2012).

Induction of labour may be associated with increased risk of HIV MTCT. Careful assessment of the need for and desirability of induction rather than CS is necessary. When induction of labour is chosen, membranes should be left intact for as long as possible. Remember: Syntocinon should not be used with intact membranes (PMTCT Guidelines, 2012).

Finally, a large proportion (60%) of women in Kenya delivers outside the health systems with assistance from family members, neighbours and TBAs. Great effort should be made to reverse this trend by implementing the community Health strategy, to achieve 80% skilled birth attendance/hospital delivery. Efforts to link households with community health workers who are also linked to the health facility should be supported (PMTCT Guidelines, 2012).

### **2.9.3 Postnatal care**

Immediate postnatal and neonatal care refers to the package of services provided to the mother

and infant before they leave the health facility (up to 48 hours) after delivery. The period provides an opportunity to educate all mothers on optimal postnatal care including HIV, to provide HIV counselling and testing if it was not done previously, and to reinforce the education provided during the antenatal period. Both HIV infected and HIV uninfected mothers should receive this education and counselling before discharge. (PMTCT Guidelines, 2012).

Late postnatal care is provided to the mother and the child 48 hours to 6 weeks after delivery. During this period, the health of the mother and child is assessed and closely monitored.

The risk of MTCT during the postpartum period can be reduced by providing HIV counselling and testing, ARV prophylaxis to the mother or exposed babies, counselling on appropriate infant feeding options and breast care. Postpartum care for HIV positive women should include clinical staging, CD4 count and ART for those who qualify. Family planning services are among the core interventions of PMTCT provided to help women determine future childbearing patterns including the prevention of HIV-infected births. Reproductive health counselling can help a woman practise safer sex and determine her future childbearing patterns on a more responsible and informed basis (PMTCT Guidelines, 2012).

Most cases of postnatal MTCT are preventable through antiretroviral (ARV) drugs and modifications in infant feeding practices. During the last decade an increasing number of HIV-infected women have gained access to antiretroviral treatment or prophylaxis effectively reducing transmission during pregnancy and birth (UNAIDS, 2009), but the transmission of HIV through breastfeeding has remained a challenge in contexts where breastfeeding is normative and vital to infant survival. Breastfeeding transmission has in fact come to contribute to an increasing part of the total MTCT in the region (Jackson *et al.*, 2010).

#### **2.9.4 Delivery care in the context of HIV/AIDS**

Delivery at a health care facility affords pregnant women an environment equipped with basic supplies and tools for safe childbirth, as well as assistance by a skilled provider. The WHO defines a skilled provider as “an accredited health professional—such as a midwife, doctor or nurse— who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns” (USAID, 2013).

Non-skilled attended delivery has been shown to correlate with high maternal mortality (Graham *et al.*, 2001). This evidence supported the selection of provider-

attended deliveries as a benchmark for improvement in maternal health and skilled attendance at birth was subsequently recognized as the “single most important factor in preventing maternal deaths” (WHO, 1999), and is used as an indicator of the progress towards achievement of the Millennium Development Goal 5 that targets to reduce maternity mortality ratio by three quarters between 1990 and 2015 (WHO, 2008).

In the context of HIV/AIDS, skilled care at birth is additionally critical to preventing intrapartum transmission of HIV. Labor and delivery entail a 10-20% risk of mother-to-child transmission within three junctures- Intrauterine, Intrapartum, and Postpartum (through breastfeeding) (De Cock *et al.*, 2000). The obstetrical factors associated with intrapartum HIV transmission include duration of ruptured membranes and [duration of] fetal exposure to significant amounts of maternal blood or infected secretions during labor or delivery (Siobhan *et al.*, 2012).

Compared to HIV positive women who deliver at a health care facility, those that do not deliver in one have been found to be less adherent to timely intrapartum ARV medication taken, as well as infant ARV Stat dose. Thus in view of the dual risk of maternity mortality and HIV transmission, skilled delivery is especially crucial for pregnant HIV positive women. (Siobhan *et al.*, 2012).

## CHAPTER THREE:

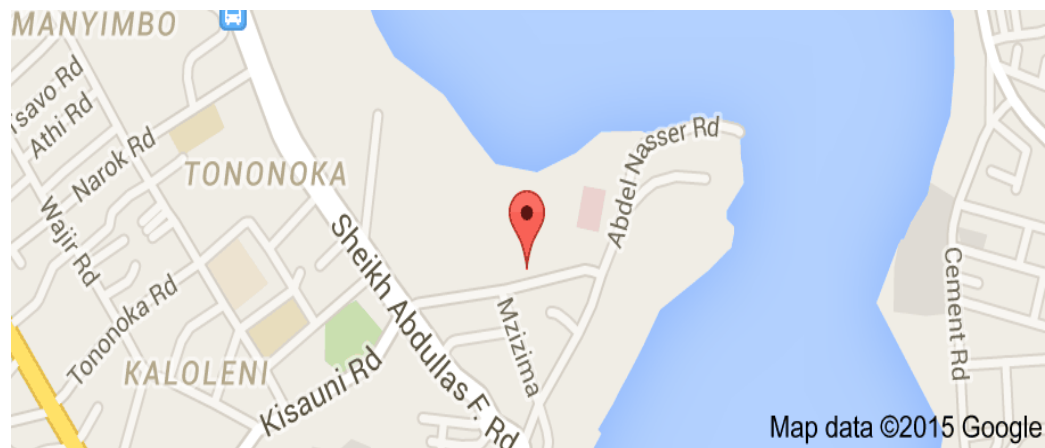
### METHODOLOGY

#### 3.0 Introduction

#### 3.1 Study Site

The study site was the Coast Province General Hospital the second largest public hospital in Kenya with a 700 bed hospital. It presently has 672 beds comprising 546 beds and 126 cots. It is a teaching and referral hospital whose service area comprises the 7 districts in Coast Province. The facility caters for a primary area population of over 1,000,000 people and a secondary population of about 2.7 million

The location is on the coast of the Indian Ocean in the city of Mombasa, south-eastern Kenya. See map below.



### **3.2 STUDY DESIGN**

This study was a cross-sectional study that utilized quantitative methods of data collection.

### **3.3 STUDY POPULATION**

The study population was pregnant women who had already enrolled for PMTCT at the antenatal clinic in Coast Province General Hospital which is the main referral hospital in the region. The Healthcare providers assisted in identifying these women and obtaining consent from them. The research therefore identified the pregnant women's perceptions of service delivery at the health facility that influenced the uptake of PMTCT services.

### **3.4 INCLUSION CRITERIA**

1. Pregnant HIV positive women attending the ANC/PMTCT services at the health facility
2. Those who gave informed consent to participate in the study.

### **3.5 EXCLUSION CRITERIA**

1. Refusal to consent to the study
2. Not pregnant
3. Not HIV positive
4. Not attending the specified health facility

### **3.6 SAMPLING**

Systematic random sampling was done based on the number of HIV positive women attending PMTCT at the antenatal clinic in a duration of 3 months.

The researcher identified the total number of women that attend PMTCT services during the morning and early afternoon hours. He then computed the desirable sample size. The sample size was calculated against the total population to obtain the constant K which was the sampling interval using the following formula:



$$K = N/n$$

where  $n$  is the sample size, and  $N$  is the population size.

The population of women attending the PMTCT services were put into a sequential order,

ensuring the subjects being studied were randomly distributed.

A random number e.g  $X$  was selected, between 1 and  $K$  (sampling interval).

The first

sampled subject was the  $X$ -th. Then every  $K$ -th subject was selected.

### 3.6.1 Sample size determination

Going by the proportion of number of women attending maternal health services at the health facility in a duration of 3 months, the sample size was determined as described by (Fisher *et al.*, 1998)

$$N = \frac{Z^2_{\alpha/2} P (1-P)}{\delta^2}$$

Whereby;

$N$  is the minimum sample size

$\delta$  is the degree of precision, which is 5%

$\alpha$  is the level of significance (95%)

$Z$  is the standard normal deviate that corresponds to 95% confidence interval

$P$  = Proportion of Pregnant HIV positive women attending the PMTCT services at the health facility.

In a Study on Refusal of HIV testing among pregnant women attending antenatal clinics in Cambodia, a cross-sectional study was conducted in 21 health centers in three Cambodian provinces which implemented PMTCT services between January and December 2006 (Svay Rieng, Kampong Thom, and Battambang Provinces). Svay Rieng which is close to the Viet Nam border had the highest uptake of HIV testing among pregnant women (85%) (WHO, 2012)

$$\begin{aligned} P &= 0.85: \text{ therefore,} \\ N &= \frac{1.96^2 \times 0.85 \times 0.15}{0.05^2} \\ &= 196 \end{aligned}$$

### **3.7 Data**

#### **3.7.1 Data collection instruments**

Pre-tested structured questionnaires (Appendix 2) were administered in English or Swahili to the pregnant HIV positive women by the Principal Investigator in order to capture the variables investigated in this study.

#### **3.7.2 Data collection procedures**

Questionnaires were pretested in order to establish if they captured all the variables in this study. The pre-tested questionnaires were administered by the researcher to capture information from the pregnant HIV women on all the variables measured. These patients were identified at the PMTCT clinic; clinicians and nurses in these facilities assisted in identifying these patients. They were only being interviewed after informed consent was obtained by the researcher. These patients were captured after the clinicians and nurses had seen and referred them to the researcher for the interviews. The interviews were been conducted by the researcher in enclosed rooms to ensure accuracy and confidentiality.

#### **3.7.3 Data entry and cleaning**

Data was entered using Microsoft Access software by the researcher. Error was minimized by cleaning and rechecking all data entries with the original data forms. The data was then imported to MS Excel which was used for coding and validation.

#### **3.7.4 Statistical Analysis**

The data was transferred to both SPSS software package (Version 16.0) and Epi Info version 6 for analysis. Fisher's exact test was applied to determine the significance of differences of relative frequencies. Bivariate analysis was performed using Chi

square to determine the association between the dependent variable and independent variables. Multivariate logistic regression using backward method was then performed, to calculate adjusted odds ratio for the independent association between late presentation and the independent variables. Only variables with a  $P < 0.05$  were entered into the initial model. To remain in the model, a significance of  $P < 0.05$  was required. The variables that remained in the final model are presented and Odds ratios were adjusted for all other variables in this model.

### **3.7.5 Data presentation**

MS Excel was used for graphical presentation. The data was presented in graphs, pie charts and tables after analysis.

### **3.8 Ethical considerations**

The study was performed according to good clinical practices and to the modified Declaration of Helsinki (WHO, 2001). Permission to perform the study was obtained from the PMTCT department in CPGH. Clearance was also obtained from; Jomo Kenyatta University of Agriculture and Technology-Institute of Tropical Medicine and Infectious Diseases, Kenya Medical Research Institute Scientific Steering Committee (SSC) (Appendix 3) and KEMRI Ethical Research Committee (ERC) (Appendix 4). Patients were enrolled into the study only after voluntary informed written consent (Appendix 1) after which the questionnaire (Appendix 2) was administered by the Principal Investigator. The patients were free to withdraw from the study at any time. There were rooms in the various facilities that were identified for the interviews to take place so that all the information was confidential. There were no known risks associated with participating in the study. There were no monetary benefits associated with participation in the study. Prior to the study sensitization meetings with the PMTCT health workers were held and the objectives were explained. All information about the patients were handled with utmost confidentiality and only used for intended purposes. The database containing patient's information was only accessible to the investigators only. The data was

stored in electronic formats and hard copies were kept in lockable cabinets that had restricted authorized access.

## CHAPTER 4

### RESULTS

#### 4.0 Introduction

#### 4.1 Description of the socio demographic factors

Majority of the women interviewed 68% (95% CI: 62-76) were married while 4% (95% CI: 1 -7) were widowed. Further, majority 41% (95% CI: 35-49) of the women had an employment status of unemployed while only 11% (95% CI: 7-16) had a salaried job. The household monthly income of 6001 to 9000 comprised the income bracket for the majority 20% (95% CI: 16-27 while 5% (95% CI: 2-8) comprised the highest income brackets, however, 42% (95% CI: 35-49) of the respondents did not have income documented. For the level of education variable, 42% (95% CI: 36-50) clients had primary education comprising the majority of the respondents with clients having college/university education being the least 7% (95% CI: 4-11). The mean age for the respondents was 30 ( $\pm 5$ ) years while the mean family size was 4(SD 2) persons (range 1- 10). The results are shown in Table 4.1.

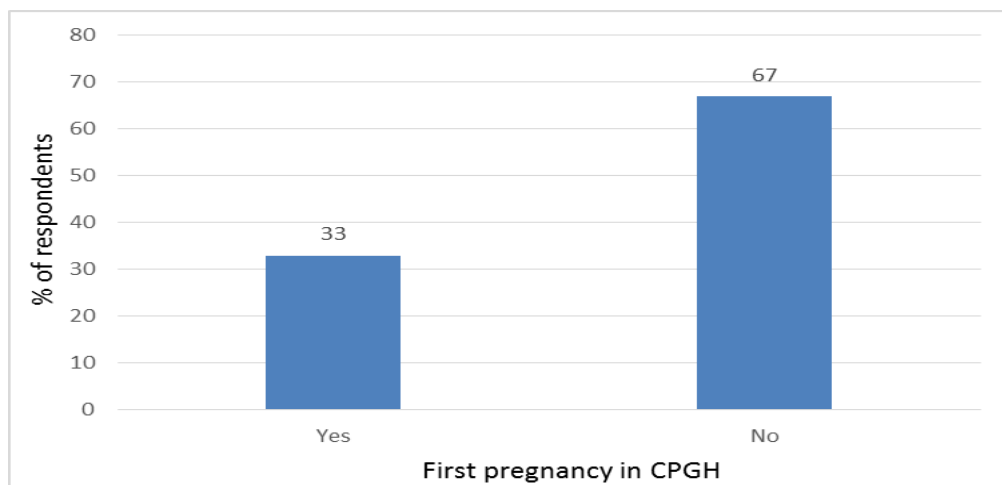
**Table 4.1: Socio-demographic characteristics of respondents**

Variable	Category	n (%)	95% CI
<b>Marital status</b>			
	Single	26 (13)	9 - 19
	Married	138 (68)	62 - 76
	Separated/divorced	13 ( 7)	4 - 11
	Widow	7 ( 4)	1 - 7
	Cohabiting	15 ( 8)	4 - 12
<b>Employment status</b>			
	Business	67 (34)	27 - 41
	Casual	19 (10)	6 - 15
	Salaried	22 (11)	7 - 16
	Unemployed	84 (41)	35 - 49
	Others	7 ( 4)	1 - 7
<b>Household monthly income (Ksh)</b>			
	<3000	9 ( 5)	2 - 8

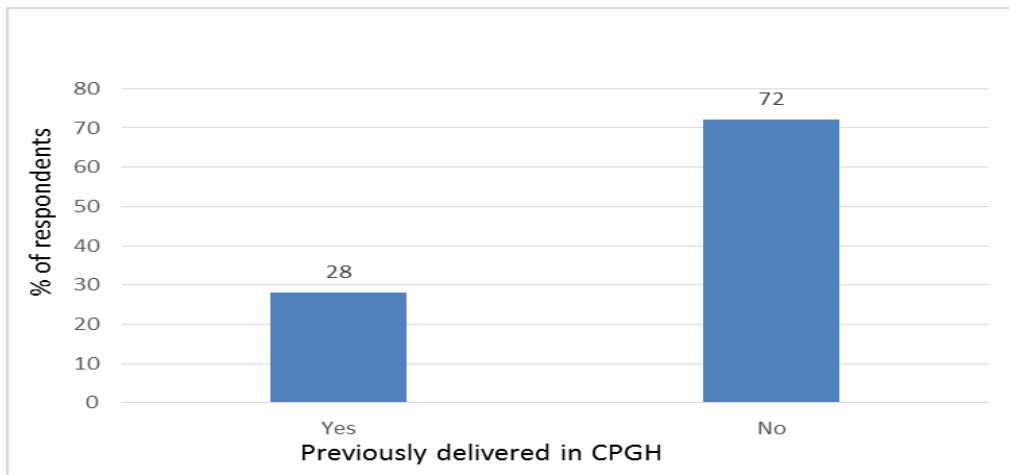
	3001_6000	31 (16)	11 - 21
	6001_9000	42 (20)	16 - 27
	>9000	34 (17)	12-23
	Missing	83 (42)	35 - 49
<b>Level of education</b>			
	None	25 (13)	8 - 18
	Primary	85 (42)	36 - 50
	Secondary	76 (38)	31 - 45
	College/University	13 (7)	4 - 11
<b>Age</b>			
	Mean (SD)	30[5]	
<b>Family size</b>			
	Mean (SD)	4[2]	

#### 4.1.1 ANC history

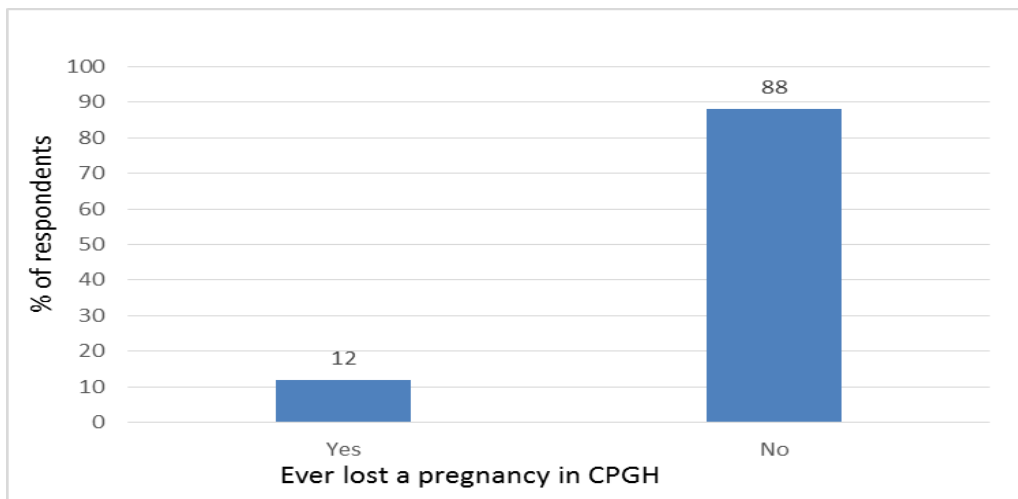
For 67% (95% CI: 59 -73) of the clients this was not the first pregnancy and of these 72% (95% CI: 66 -79) had previously delivered in CPGH. Only 12% (95% CI: 8 - 18) of the clients who had a previous pregnancy had lost a pregnancy at CPGH (Fig. 4.1 - 4.3).



**Figure 4.1: Proportion of clients whom this was not their first pregnancy**



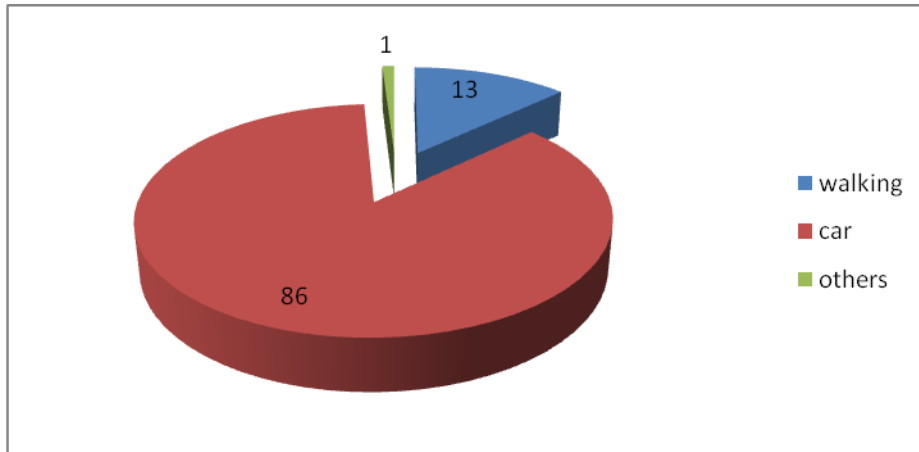
**Figure 4.2: Proportion of clients who had previously delivered in CPGH**



**Figure 4.3: Proportion of clients who had ever lost a pregnancy in CPGH**

#### 4.1.2 Mode of transport to the hospital

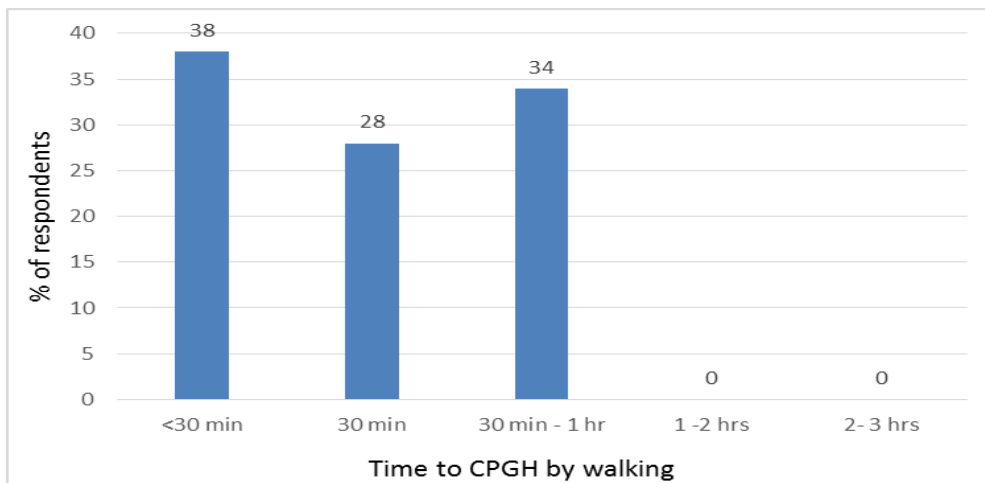
In respect to mode of transport to the hospital, a majority 86% (95% CI: 81 -91) used motorized transport while 13% (95% CI: 8-18) walked to get to CPGH (Fig 4.4).



**Figure 4.4: Mode of transport used to get to hospital**

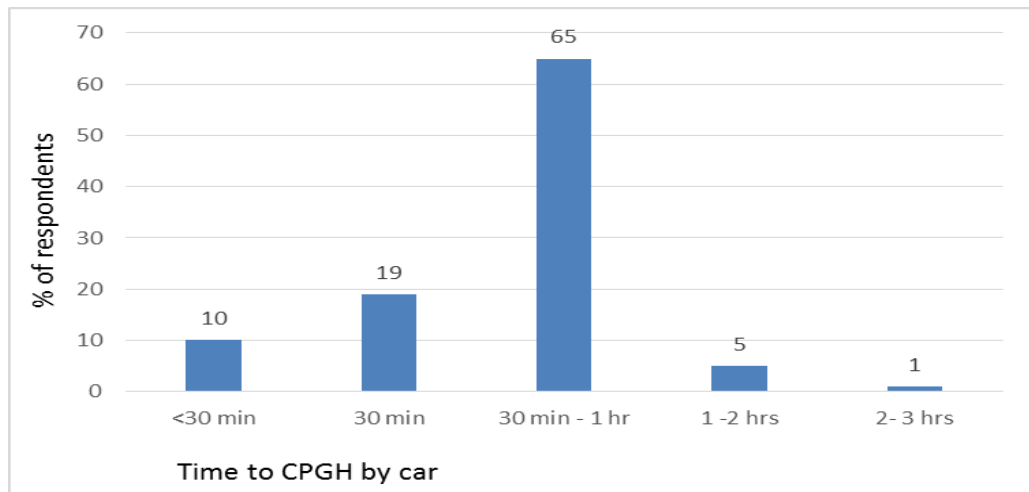
#### 4.1.3 Duration of time taken to facility

All the clients who came to hospital walking took less than 1 hour to get to CPGH with the majority 38% getting to hospital in less than 30 minutes. Similarly, clients who used a car as a mode of transport also took less than 1 hour with the majority 65% getting to hospital in 30 minutes to 1 hour (Figure 4.5 - 4.6).



**Figure 4.5: Time taken to reach CPGH via walking**

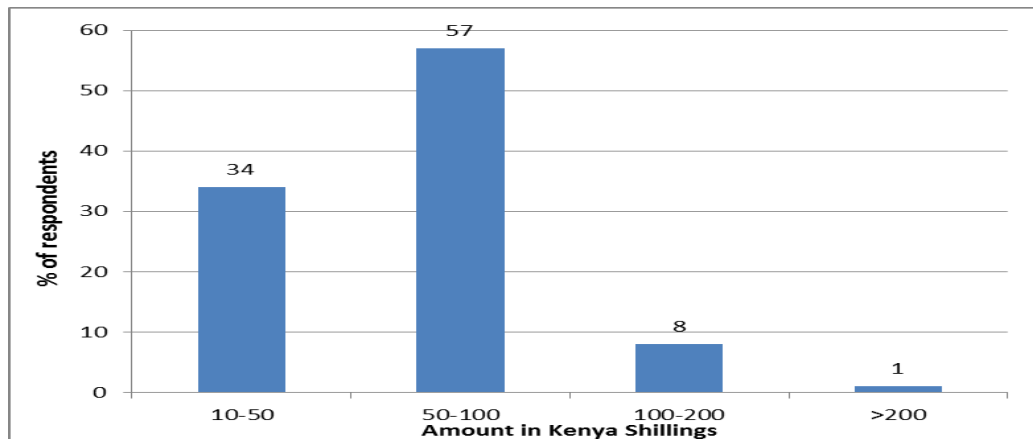




**Figure 4.6: Time taken to reach CPGH via car**

#### 4.1.4 Average cost of transport to the hospital

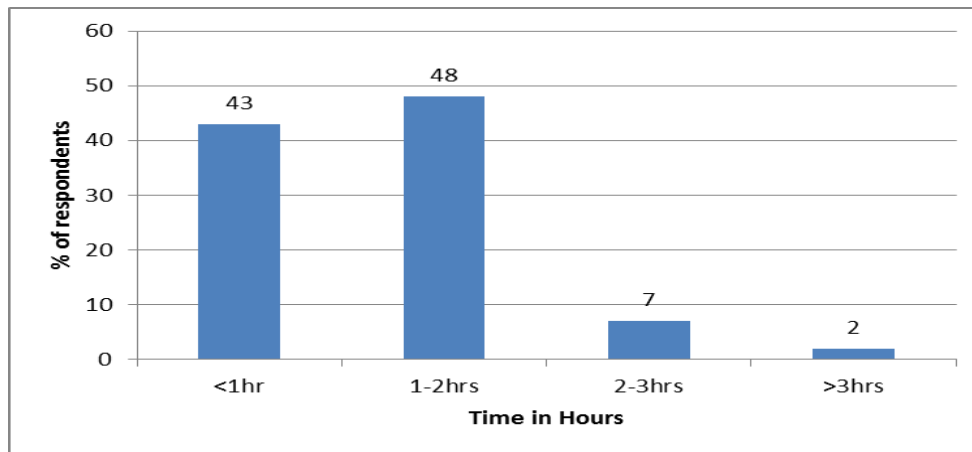
For clients who were required to pay fare, about half 57% (95% CI: 50 -65) spent between 50 to 100 Kenya shillings with only 1% (95% CI: 0- 3) spending more than 200 shillings one way. (Fig 4.7).



**Figure 4.7: Cost in Kenya shillings to the hospital**

#### 4.1.5 Time spent at facility

On inquiry on the time spent at the facility, the majority (91%) spent two or less hours with 43% spending less than an hour, 48% (95% CI: 41 – 55) between 1 and 2 hours, while only 2% (95% CI: 0 -3) spent more than 3 hours (Fig. 4.8).



**Figure 4.8: Time spent in the facility while seeking PMTCT services at CPGH**

#### **4.2 The association between socio-demographic factors and first PMTCT visit experience**

None of the socio demographic factors were significantly associated with seeking PMTCT services at CPGH. However there was a suggestive trend for an increase in odds with increase in level of education, with clients with no education as the reference group, an increase in the education level increased the odds of seeking PMTCT services for the first time in CPGH by 0.96 and 1.74 times for primary and college/university education respectively. However formal test for trend for this variable was not significant. (Table 4.2)

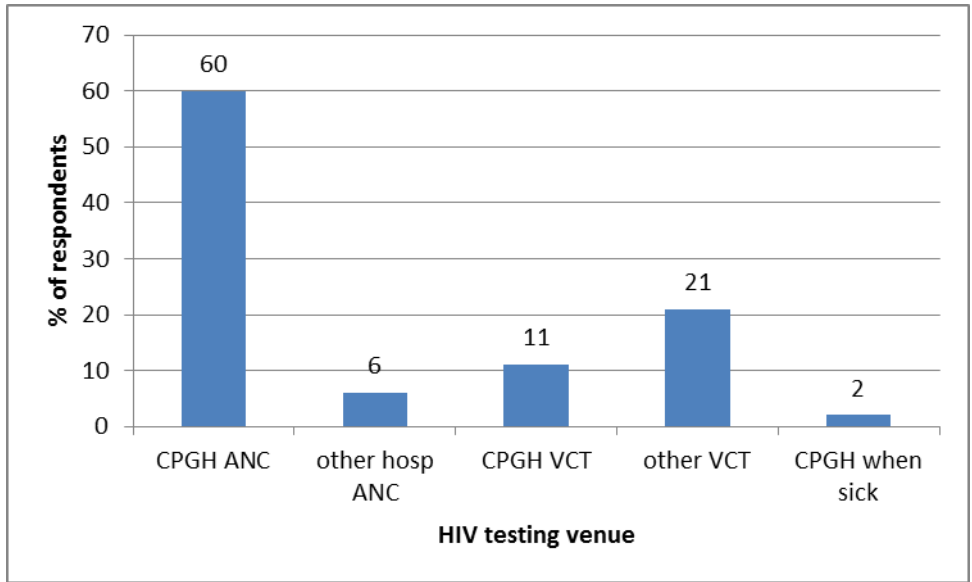
**Table 4.2: Bivariate analysis for the association between socio-demographic factors and first PMTCT visit experience**

	1 <sup>st</sup> PMTCT visit		OR	95% CI		P value
	Yes (%)	n No n(%)		Lower CI	Upper CI	
<b>Marital status</b>						
Single	22[14.8]	4[8.3]	(base)			
Married	99[66.4]	39[81.3]	0.46	0.15	1.43	0.179
Separated/divorced	11[7.4]	2[4.2]	1.00	0.16	6.33	1
Widow	4[2.7]	1[2.1]	0.73	0.06	8.32	0.798
Cohabiting	13[8.7]	2[4.2]	1.18	0.19	7.37	0.858
<b>Employment status</b>						
Business	50 (33)	17 (35)	0.75	0.35	1.60	0.454
Casual	15 (10)	4 ( 8)	0.95	0.28	3.24	0.937
Salaried	14 (9)	8 (16)	0.44	0.16	1.23	0.118
Unemployed	67 (45)	17 (35)	(base)			
Others	4 ( 3)	3 ( 6)	0.34	0.07	1.66	0.181
<b>Household monthly income</b>						
<3000	6 ( 4)	3 ( 6)	0.52	0.10	2.61	0.426
3001_6000	18 (12)	13 (27)	0.36	0.12	1.07	0.067
6001_9000	32 (21)	10 (20)	0.83	0.28	2.48	0.738
>9000	27 (18)	7 (14)	(base)			
Missing	67 (45)	16 (33)	1.09	0.40	2.93	0.871
<b>Level of education</b>						
None	19[12.7]	6[12.2]	(base)			
Primary	64[42.7]	21[42.9]	0.96	0.34	2.73	0.943
Secondary	56[37.3]	20[40.8]	0.88	0.31	2.53	0.818
College/University	11[7.3]	2[4.1]	1.74	0.30	10.14	0.54

### 4.3 To determine the knowledge and attitudes of mothers on the available PMTCT services at the antenatal clinic.

#### 4.3.1 Where respondents tested for HIV

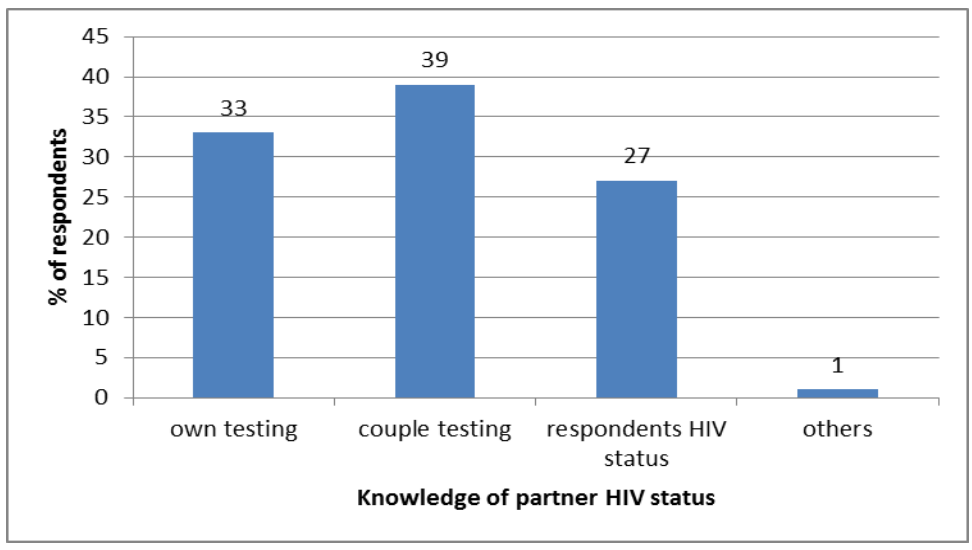
On inquiry on testing, 71% of the clients reported that they were tested for HIV in CPGH VCT and ANC, with 60% (95% CI: 53-67) of these being at the ANC; however only 3 (2%; 95% CI: 0-3) were tested in CPGH due to an illness (Fig 4.9).



**Figure 4.9: Venue of HIV testing for PMTCT clients enrolled**

**4.3.2 Where partner knew status**

Of all interviewed, 39% (95% CI: 29-49) of the clients' partners knew their HIV status through couple testing while 27% (95% CI: 18-37) used the clients HIV status as a proxy to their HIV status (Fig. 4.10).



**Figure 4.10: How PMTCT client partners knew their HIV status**

### 4.3.3 FP method used

Injection was the most common (35%; 95% CI: 29-43) method of family planning that was known by the clients followed by pills and condoms at 25% (95% CI: 19 - 31) and 22% (95% CI: 17-29) respectively (Fig. 4.11).

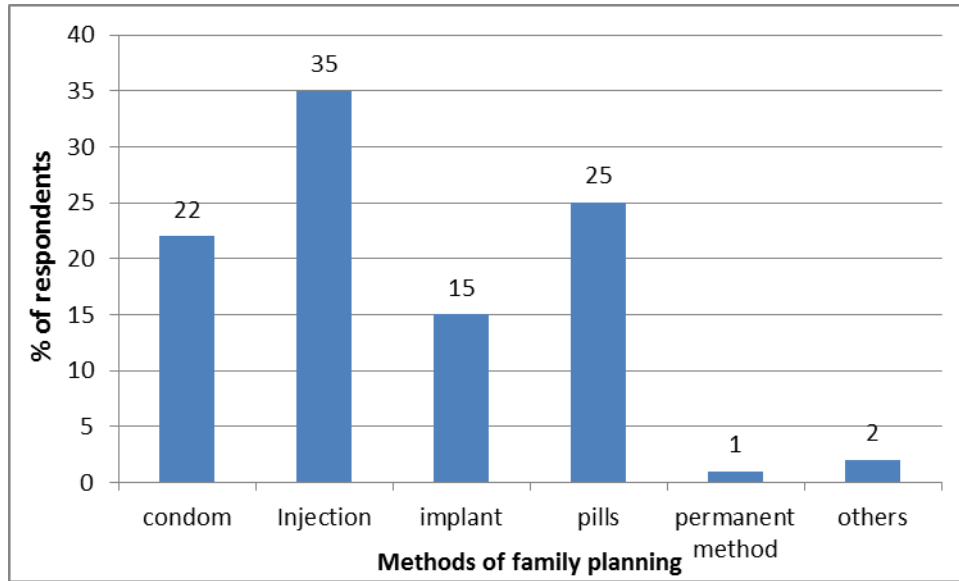


Figure 4.11: Family planning methods previously used

### 4.3.4 Source of information on FP

The most common source of information on family planning among the clients was CPGH ANC 34% (95% CI: 28-41) followed by family and friends 23% (95% CI: 18-30) then other hospital ANC and media (both at 14% (95% CI: 9-19) (Fig. 4.12).

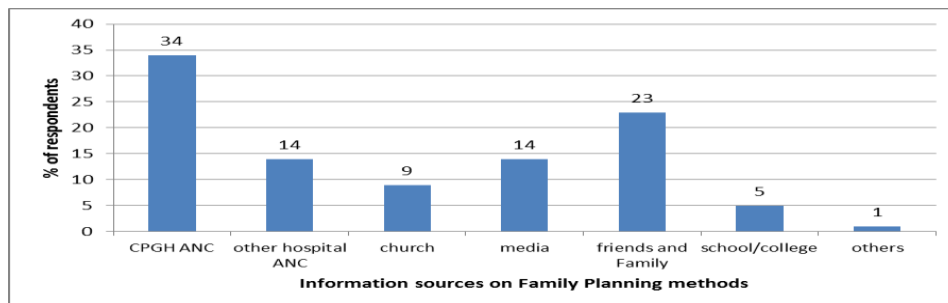
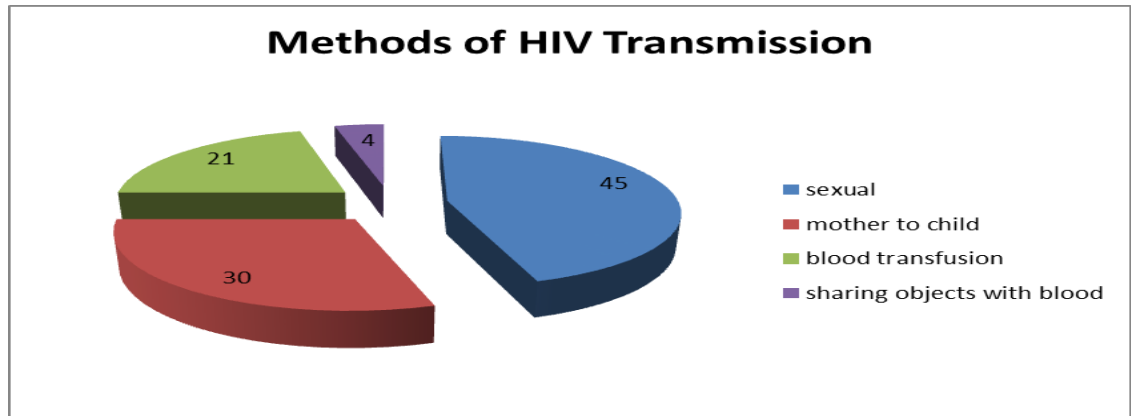


Figure 4.12: Source of information on family planning methods

### 4.3.5 Methods of HIV transmission

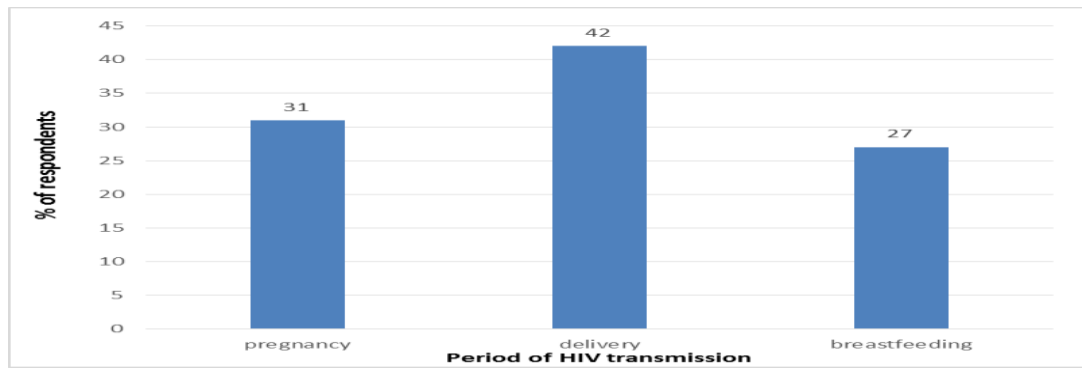
Sexual intercourse and transmission from mother to child were the commonly identified modes of HIV transmission at 45% (95% CI: 38-52) and 30% (95% CI: 23-47) respectively while the least number of respondents 4% (95% CI: 2-8) identified was sharing objects with blood (Fig. 4.13).



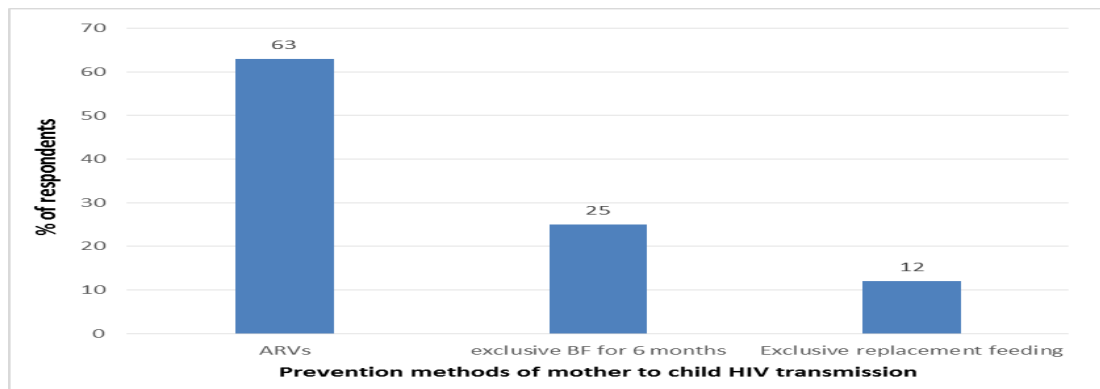
**Figure 4.13: PMTCT clients' knowledge of modes of HIV transmission**

### 4.3.6 Knowledge of period of transmission and prevention of HIV transmission

Forty two percent (42%) (95% CI: 34-49) highlighted the period of delivery as being likely time of transmitting HIV while the rest noted during pregnancy 31% (95% CI: 25-39) and breastfeeding 27% (95% CI: 21-34). The most identified mode of prevention for mother to child transmission was use of ARVs while exclusive breast feeding and exclusive replacement feeding were also reported 25% (95% CI: 19-32) and 12% (95% CI: 8-18) respectively. (Fig. 4.14 - 4.15)



**Figure 4.14: Knowledge of period of HIV transmission**



**Figure 4.15: Knowledge of prevention of mother to child HIV transmission**

#### **4.3.7 The association between ANC factors and first PMTCT visit experience**

Clients who had never delivered previously in CPGH had a significantly ( $p < 0.001$ ) higher odds by 6 times to use PMTCT services compared to clients who had previously delivered in CPGH. Further clients who had never lost a pregnancy in CPGH and were in the hospital for the first time were 3 times likely to seek PMTCT services in CPGH compared to those who had lost a pregnancy in CPGH. No significant association was identified between duration of time spent on getting to hospital or fare spent to hospital with attending the first PMTCT visit in CPGH, however there was a suggestive trend although not significant that the longer it took to get to hospital and hence more fare paid, the more likely was a client likely to utilise PMTCT services for the first time in CPGH (Table 4.3).

**Table 4.3: Bivariate analysis for the association between ANC factors and first PMTCT visit experience**

	<b>1<sup>st</sup> PMTCT visit</b>		<b>OR</b>	<b>95% CI</b>		<b>P value</b>
	<b>Yes n(%)</b>	<b>No n(%)</b>		<b>Lower CI</b>	<b>Upper CI</b>	
<b>Previously delivered in CPGH</b>						
Yes	28[18.7]	28[57.1]	(base)			
No	122[81.3]	21[42.9]	6.26	3.09	12.68	<0.001
<b>Any lost Pregnancy at CPGH</b>						
Yes	15[10.0]	12[24.5]	(base)			
No	135[90.0]	37[75.5]	3.37	1.42	8.00	0.006
<b>Transport mode used</b>						
Walking	21[14.0]	3[6.1]	(base)			
Car	128[85.3]	46[93.9]	0.40	0.11	1.40	0.150
Others	1[0.7]	0[0.0]	(empty)			
<b>Duration to facility</b>						
<30 min	20[13.3]	7[14.3]	(base)			
30 min	27[18.0]	14[28.6]	0.68	0.23	1.98	0.474
30 min - 1 hr	96[64.0]	25[51.0]	1.34	0.51	3.53	0.549
1 -2 hrs	5[3.3]	3[6.1]	0.58	0.11	3.10	0.527
2- 3 hrs	2[1.3]	0[0.0]	(empty)			
<b>Fare spent</b>						
10-50	38[29.0]	23[50.0]	(base)			
50-100	80[61.1]	21[45.7]	2.31	1.14	4.67	0.020
100-200	12[9.2]	2[4.3]	3.63	0.75	17.70	0.111
>200	1[0.8]	0[0.0]	(empty)			
<b>Time spent in facility</b>						



<1hr	72[48.0]	16[32.7]	(base)			
1-2hrs	68[45.3]	25[51.0]	0.61	0.30	1.25	0.177
2-3hrs	8[5.3]	7[14.3]	0.26	0.08	0.81	0.021
>3hrs	2[1.3]	1[2.0]	0.45	0.04	5.28	0.526

#### 4.3.8 The association between utilisation of Family planning services and first PMTCT visit experience

The FP method used and source of information on FP were not associated with the first PMTCT visit in CPGH, however use of family planning method before was significantly ( $p=0.001$ ) associated with an increased odds of 6 times of utilising PMTCT services for the first time in CPGH with use of FP before pregnancy as the reference group (Table 4.4).

**Table 4.4: Bi-variate analysis for the association between utilisation of Family planning services and first PMTCT visit experience**

	1 <sup>st</sup> PMTCT visit		OR	95% CI		P value
	Yes n(%)	No n(%)		Lower CI	Upper CI	
<b>Know what is FP</b>						
Yes	145[96.7]	49[100.0]				
No	5[3.3]	0[0.0]	empty			
<b>FP method</b>						
Condom	33[22.8]	10[20.4]	(base)			
Injection	56[38.6]	14[28.6]	1.21	0.48	3.04	0.681
Implant	19[13.1]	10[20.4]	0.58	0.20	1.63	0.299
Pills	34[23.4]	13[26.5]	0.79	0.31	2.06	0.633
Permanent method	1[0.7]	1[2.0]	0.30	0.02	5.29	0.413
Others	2[1.4]	1[2.0]	0.61	0.05	7.40	0.695
<b>Source of information on FP</b>						
CPGH ANC	44[30.3]	22[44.9]	(base)			
Other hospital ANC	14[9.7]	14[28.6]	0.50	0.20	1.23	0.131
Church	16[11.0]	2[4.1]	4.00	0.84	18.97	0.081

Media	24[16.6]	3[6.1]	4.00	1.08	14.75	<b>0.037</b>
Friends n Family	36[24.8]	8[16.3]	2.25	0.90	5.65	0.085
School/college	10[6.9]	0[0.0]	(empty)			
Others	1[0.7]	0[0.0]	(empty)			
<b>Family planning use before pregnancy</b>						
Yes	91[60.7]	44[89.8]	(base)			
No	59[39.3]	5[10.2]	5.71	2.14	15.22	<b>0.001</b>

#### 4.3.9 The association between HIV knowledge and PMTCT services and first PMTCT visit experience

None of the knowledge factors explored were significantly associated with seeking PMTCT services in CPGH for the first time except on methods of prevention of mother to child transmission. With clients given ARV's as the reference group, clients who reported exclusive breast feeding for 6 months had significantly decreased odds of 0.4 times while those who reported exclusive feed replacement had a significantly decreased odds of 0.3 times for seeking PMTCT services for the first time in CPGH (Table 4.5).

**Table 4.5: Bi-variate analysis for the association between HIV knowledge and PMTCT services and first PMTCT visit experience**

	1 <sup>st</sup> PMTCT visit		OR	95% CI		P value
	n(%)	No n(%)		Lower CI	Upper CI	
<b>Methods of HIV transmission</b>						
Sexual	74[49.3]	22[44.9]	(base)			
Mother to child	44[29.3]	11[22.4]	0.93	0.39	2.18	0.863
Blood transfusion	29[19.3]	11[22.4]	0.61	0.25	1.48	0.274
Sharing objects with blood	3[2.0]	5[10.2]	0.14	0.03	0.64	0.012
<b>Protection from HIV</b>						

Use condoms	63[42.0]		(base)				
		23[46.9]					
Abstinence	42[28.0]		1.06	0.48	2.36	0.888	
		13[26.5]					
Being faithful	44[29.3]		1.11	0.50	2.47	0.798	
		13[26.5]					
Others	1[0.7]	0[0.0]	(empty)				
<b>Period pregnant transmit HIV</b>							
Pregnancy	55[36.7]		(base)				
		19[38.8]					
Delivery	59[39.3]		0.96	0.41	2.23	0.928	
		16[32.7]					
Breastfeeding	36[24.0]		0.67	0.28	1.63	0.377	
		14[28.6]					
<b>PMTCT services in facility</b>							
FP	34[22.7]		(base)				
		11[22.4]					
Prevention of HIV transmission	30[20.0]		0.74	0.27	2.00	0.556	
		13[26.5]					
HIV testing	46[30.7]		1.06	0.40	2.76	0.911	
		14[28.6]					
Pre-test counseling	15[10.0]	4[8.2]	1.21	0.32	4.58	0.784	
Post-test counseling	7[4.7]	3[6.1]	0.75	0.16	3.52	0.716	
Mother to child transmission	18[12.0]	4[8.2]	1.45	0.39	5.41	0.583	
<b>Prevention of mother to child transmission</b>							
ARVs	106[70.7]		(base)				
		26[53.1]					
exclusive BF for 6 months	30[20.0]		0.36	0.16	0.79	0.011	
		15[30.6]					

Exclusive replacement feeding	14[9.3]	8[16.3]	0.31	0.11	0.85	0.023
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#### 4.3.10 HIV testing and counselling experience

Of all the clients, 79% (95% CI: 73 - 85) were administered ARVs with just over half of these 92% (95% CI: 51 - 67) being in the first trimester and only 38% (95% CI: 7-18) in the third trimester. Pre-test counselling was almost comprehensively done with only 1% (95% CI: 0 - 4) of the clients reporting no pre-test counselling. Post-test counselling and explanation was done in over 96% (95% CI: 93 - 99) of the clients. Similarly, queries were answered in almost all cases 98% (95% CI: 96 -100), further 94% (95% CI: 90 -97) of the clients reported being satisfied with the privacy arrangement provided (Table 4.6).

**Table 4.6: HIV testing and counselling experience**

Variable	Category	n(%[95% CI])
<b>ARV administered</b>		
	Yes	156 (79 [73 - 85])
	No	41 (21 [15 - 27])
<b>Stage of ARV administration</b>		
	First trimester	92 (59 [51 - 67])
	Second trimester	69 (29 [22 - 37])
	Third trimester	38 (12 [ 7 - 18])
<b>Pre testing counseling</b>		
	Yes	197 (99 [96 - 100])
	No	2 ( 1 [ 0 - 4])
<b>Post-test counseling</b>		
	Yes	192 (96 [93 - 99])
	No	7 ( 4 [ 1 - 7])
<b>Results explained</b>		
	Yes	195 (98 [95 - 99])
	No	4 ( 2 [ 1 - 5])

<b>Number of times tested</b>		
Once		127 (64 [57 - 70])
Twice		72 (36 [30 - 43])
<b>Queries answered</b>		
Yes		196 (98 [96 - 100])
No		3 (2 [0 - 4])
<b>Satisfied with privacy</b>		
Yes		187 (94 [90 - 97])
No		12 (6 [3 - 10])

#### 4.3.11 The association between HIV testing information and first PMTCT visit experience

In regard to HIV information, clients who were not administered with ARVs had a significantly increased odd of 8 times as compared to those who administered ARVs if they were seeking PMTCT services for the first time in CPGH of having received such information. With those explained to the HIV results as the reference group, clients attending PMTCT for the first time had a significantly decreased odds of 0.1 (95% CI: 0.01 – 0.98; p=0.048). Similarly clients who were tested twice had significantly decreased odds of 0.4 seeking PMTCT services for the first time (95% CI: 0.21 – 0.79; p=0.008) as compared to those who were tested once. All other HIV related information was not significantly associated with seeking PMTCT services for the first time (Table 4.7).

**Table 4.7: Bi-variate analysis for the association between HIV testing information and first PMTCT visit experience**

	<b>1<sup>st</sup> PMTCT visit</b>		<b>OR</b>	<b>95% CI</b>		<b>P value</b>
	<b>Yes n (%)</b>	<b>No n (%)</b>		<b>Lower CI</b>	<b>Upper CI</b>	
<b>HIV testing information Confidentiality explained</b>						
Yes	146[97.3]	46[97.9]	(base)			

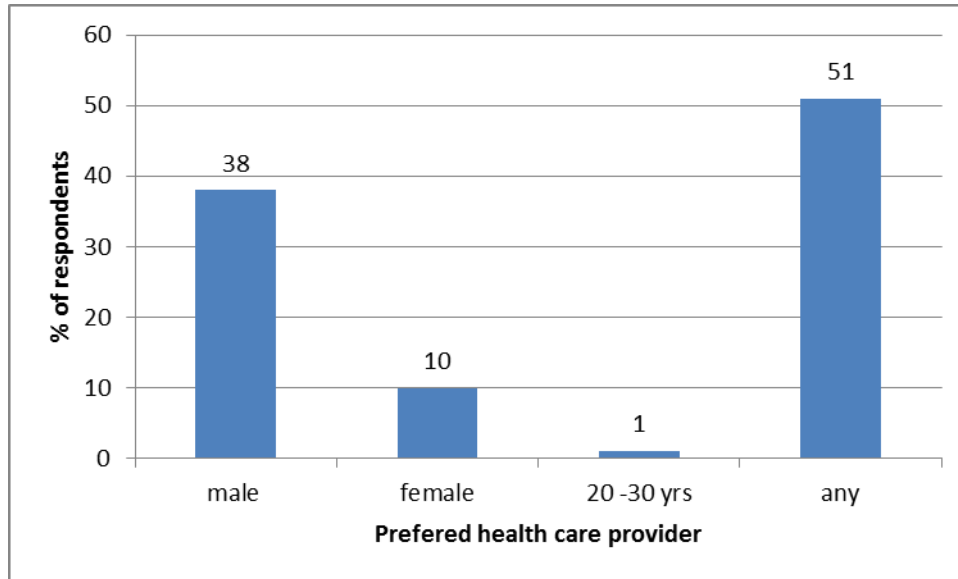
No	4[2.7]	1[2.1]	1.26	0.14	11.56	0.838
<b>ARV administered</b>						
Yes	111[74.0]	45[95.7]	(base)			
No	39[26.0]	2[4.3]	7.91	1.83	34.13	0.006
<b>Stage of ARV administration</b>						
First trimester	69[62.2]	23[51.1]	(base)			
Second trimester	30[27.0]	16[35.6]	0.59	0.27	1.28	0.182
Third trimester	12[10.8]	6[13.3]	0.63	0.21	1.88	0.404
<b>Pre-testing counseling</b>						
Yes	150[100.0]	47[95.9]				
No	0[0.0]	2[4.1]				
<b>Post-test counseling</b>						
Yes	144[96.0]	48[98.0]	(base)			
No	6[4.0]	1[2.0]	1.93	0.23	16.45	0.548
<b>Results explained</b>						
Yes	149[99.3]	46[93.9]	(base)			
No	1[0.7]	3[6.1]	0.10	0.01	0.98	0.048
<b>Number of times tested</b>						
Once	103[68.7]	24[49.0]	(base)			
Twice	47[31.3]	25[51.0]	0.41	0.21	0.79	0.008

#### 4.4 Patient-provider relationship during PMTCT uptake at the antenatal clinic

While availability of service is important in determining uptake of services, the patient-provider relationship is key in determining uptake (i.e. the pull factors)

#### 4.4.1 Provider preference during HIV testing

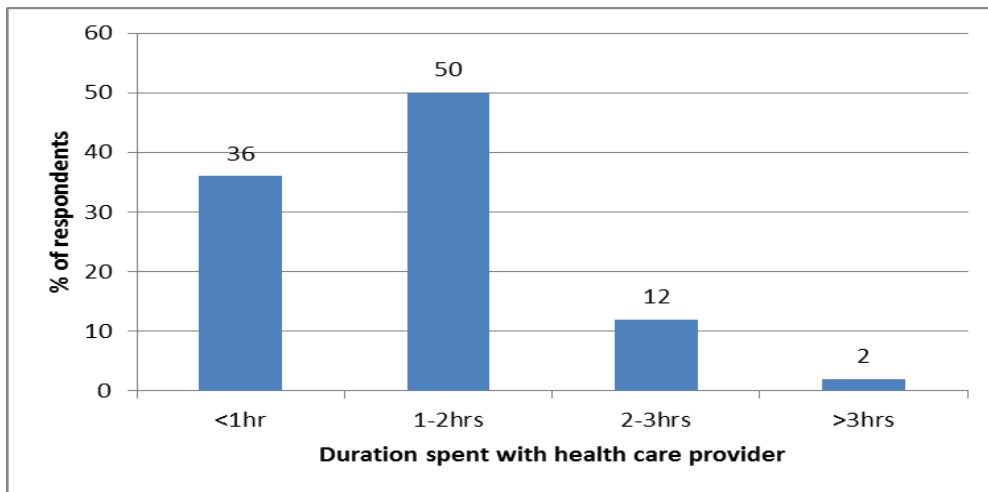
Half of the clients (51%; 95% CI: 45 – 59) did not have any preference of the provider giving PMTCT services; however this was more among the males (38%) than the females (10%) (Fig. 4.16).



**Figure 4.16: Provider preference during HIV testing**

#### 4.4.2 Time spent with care provider when seeking PMTCT services

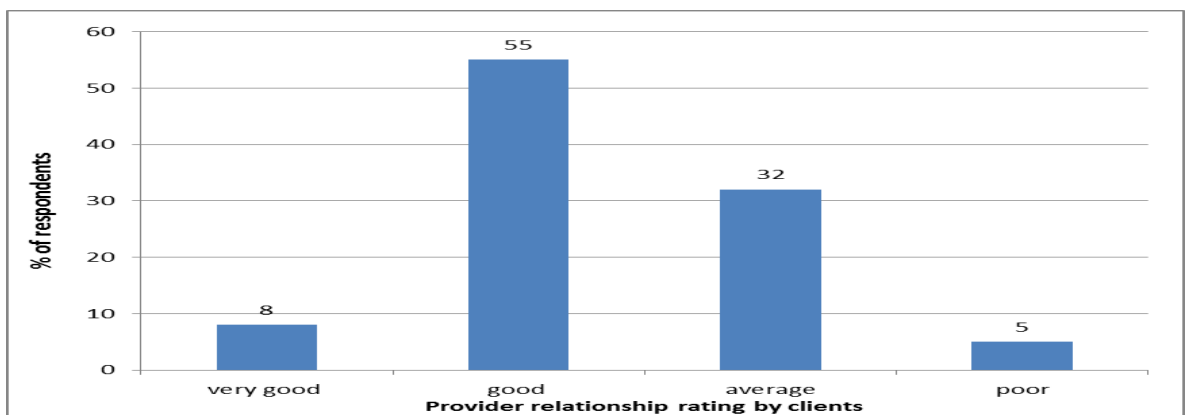
Most patients (86%) spent 2 hrs or less with the PMTCT service provider. For all the interviewed patients, half spent between one to two hours with the care provider while 12 and 2 percentage spent between two and three hours and over three hours respectively (Fig. 4.17).



**Figure 4.17: Time spent with care provider when seeking PMTCT services**

#### **4.4.3 Performance rating by the PMTCT clients on client-provider relationship**

The client-provider relationship was rated as good by half (55%; 95% CI: 48 - 62) of the clients with 32% rating it average and only 8% and 5% of the clients rated this relationship as very good and poor respectively (Fig. 4.18).



**Figure 4.18: Performance rating by the PMTCT clients on client-provider relationship**



#### 4.4.4 The association between social interaction with provider during testing and first PMTCT visit experience

None of the social interaction factors investigated were significantly associated with seeking PMTCT services for the first time in CPGH. Although not significant, there was a suggestive trend with an increase in odds for each change in category from better to worse when compared to those who rated the provider relationship as very good, with those who rated the relationship as poor having a 2 times increased odds of having sort PMTCT services for the first time (Table 4.8).

**Table 4.8: Bi-variate analysis for the association between social interaction with provider during testing and first PMTCT visit experience**

	1 <sup>st</sup> PMTCT visit		OR	95% CI		P value
	Yes n (%)	No (%)		Lower CI	Upper CI	
<b>Queries' answered</b>						
Yes	150[100.0]	46[93.9]				
No	0[0.0]	3[6.1]	Empty			
<b>Preferred provider</b>						
Male	60[40.0]	15[30.6]	(base)			
Female	13[8.7]	6[12.2]	0.48	0.15	1.49	0.203
20 -30yrs	1[0.7]	0[0.0]	(empty)			
Any	76[50.7]	28[57.1]	0.60	0.29	1.25	0.174
<b>Time spent with provider</b>						
<1hr	61[40.7]	13[26.5]	(base)			
1-2hrs	71[47.3]	25[51.0]	0.51	0.23	1.13	0.096
2-3hrs	16[10.7]	9[18.4]	0.32	0.11	0.91	0.032
>3hrs	2[1.3]	2[4.1]	0.18	0.02	1.42	0.104
<b>Satisfied with privacy</b>						
Yes	139[92.7]	48[98.0]	(base)			
No	11[7.3]	1[2.0]	3.64	0.46	28.97	0.222

<b>Provider relationship</b>						
Very good	13[8.7]	6[12.2]	(base)			
Good	83[55.3]	28[57.1]	0.91	0.27	3.03	0.881
Average	48[32.0]	14[28.6]	1.05	0.30	3.75	0.934
Poor	6[4.0]	1[2.0]	1.85	0.17	20.26	0.616

#### **4.5 Multivariate model for the independent predictors of undertaking the first PMTCT visit in CPGH**

After successful modelling strategy for multivariate modelling age, previously delivering at CPGH and family planning use were identified as the significant predictors of attending first PMTCT visit in CPGH.

**Table 4.9: Multivariate model for the independent predictors of undertaking the first PMTCT visit in CPGH**

	<b>OR</b>	<b>Lower CI</b>	<b>Upper CI</b>	<b>P value</b>	<b>LRT P value</b>
					0.003
<b>Age in years</b>	0.93	0.86	1.01	0.074	
<b>Previously delivered in CPGH</b>					
<b>Yes</b>	(base)				
<b>No</b>	5.78	2.70	12.38	<0.001	
<b>Family Planning use</b>					
<b>Yes</b>	(base)				
<b>No</b>	4.33	1.52	12.35	0.006	

## **CHAPTER 5:**

### **DISCUSSION**

The fact that none of the demographic factors investigated influence uptake of PMTCT is in contrast with an important finding that CPGH provides both primary care services and referral services with patients coming for PMTCT services walking to the facility while others used car transport for up to 2 hours. CPGH is the only referral hospital in Coast region and thus patients from different areas are forced to travel to the hospital to seek both primary care services and referral services.

These findings are in tandem with work done by WHO which showed that pregnant women in low- and middle-income countries are often unable to easily access antenatal and PMTCT services. Many live a long way from their nearest health facility and have little access to transport. Between 2005 and 2011 nearly a third of pregnant women, in WHO South-East Asia Region, Eastern Mediterranean Region and African Region, did not attend an antenatal clinic. Women that do visit an antenatal clinic often only do so once during their pregnancy. This greatly reduces the number of women that can be reached by PMTCT programs (WHO, 2012).

To increase attendance, clinics should aim to be as accessible as possible. Improvements might include providing travel services or changing opening hours. For example, one program in rural India boosted attendance by setting up a Saturday clinic (Samuel, *et al.*, 2006). This supports a trend from CPGH findings although not significant that the longer it took to get to hospital and hence more fare paid, the more likely was a client likely to utilise PMTCT services for the first time in CPGH.

While women who are HIV-positive should be encouraged to give birth at a clinic, as this reduces the risk of maternal mortality and MTCT, this is often not possible due to the distance between home and clinic. In some clinics, waiting mothers' shelters

provide accommodation for women nearing the end of their pregnancy to ensure they deliver within a healthcare setting (WHO, 2012).

In Kenya, one of the initiatives is to promote testing while overcoming distance i.e. the home based testing and counseling initiative. In a study in the Western Part of Kenya, Home-based HIV counselling and testing was feasible among the rural population in the region, with a majority of the population accepting to get tested (Ndege *et al.*, 2013)). These data suggest that scaling-up of HBCT is possible and may enable large numbers of individuals to know their HIV sero-status in sub-Saharan Africa.

Since CPGH provides both primary and referral services, this makes the PMTCT care centre a complex environment and therefore the results should be interpreted with this setting in mind. For example, distance decay, cannot be evaluated as an explanatory factor for poor uptake of PMTCT services.

One of the other findings for one of the study objectives knowledge of mothers on the available PMTCT services was that there was a significant association between women never having sought reproductive health services in CPGH (e.g. previous delivery, family planning, abortion care etc) and seeking PMTCT services for the first time in CPGH. This may therefore suggests possible bad experiences during other encounters and hence an avoidance for repeat visits. This is evident with women whose this was not the first pregnancy and had not lost a pregnancy in CPGH being more than 3 times likely to seek the first PMTC visit services in CPGH. This is because this client group had no prior experience with CPGH services that are normally provided by the hospital e.g. reproductive health services, outpatient services, nutritional services, in-patient services etc.

These findings are further supported by work done by UNICEF showing that preventing mother-to-child transmission of HIV is reliant on strong healthcare systems and infrastructure. However, in many countries there is a short supply of healthcare workers, which can adversely affect the standard of care and capacity of clinics. Moreover, an inefficient supply of PMTCT drugs or testing kits and the

separation of core services can make visits to health clinics prolonged or unnecessary (UNICEF, 2008). These negative experiences of health clinics can result in negative attitudes that dissuade pregnant mothers from accessing these key services. A lack of capacity and coordination may also result in gaps in the care delivered to mothers; for example an overworked healthcare worker may fail to deliver a key PMTCT intervention, such as an initial HIV test.

Ultimately, the best solution is to recruit more health workers. In the shorter term, better training, greater support and motivation can improve the efficiency of existing staff. Another proven remedy is the recruitment of lay counselors, either paid or unpaid, to help provide counseling (Becker *et al.*, 2012). With a few weeks training and ongoing supervision, lay counselors can give a good quality service and lighten the workloads of full-time professionals (Becker *et al.*, 2012).

In addition, the services that pregnant women access during their pregnancy are often situated across a number of locations. These can include: Maternal, neonatal, child healthcare facilities, labor and delivery, ART centers and laboratory diagnostic services; all services play a role in the prevention of mother-to-child transmission and the health of mothers. Coordinating and integrating these services can improve uptake and make the functioning of health clinics more efficient (UNICEF, 2008).

From a WHO point of view, one of the other strategies is the integration of two services traditionally provided separately: maternal, newborn, and child health (MNCH) and prevention of mother-to-child transmission (PMTCT) of HIV (WHO, UNAIDS AND UNICEF 2009). Integration in this case entails reorienting health systems to ensure that critical interventions to prevent, detect, and treat HIV are incorporated within the package of services for pregnant women, their infants and children, and their families (WHO, 2007d). The vision for full integration calls for inclusion of PMTCT interventions within the full continuum of existing public, private, and community-based women's, newborns', and children's health services, including sexual and reproductive health programs. From a programmatic point of

view, integration could also mean merging existing PMTCT and MNCH programs at the district, regional, and national level (WHO, 2007d).

Therefore care provided in other maternal and child healthcare departments within the hospital may influence uptake of PMTCT services hence provision of services must be efficient across all departments in the healthcare set up.

Despite almost all women knowing about family planning, women seeking PMCT services were 6 times likely not to have had a family planning method before despite the mean age of the respondents being 30 suggesting poor uptake of family planning methods in this population.

This therefore is not in line with Kenyan PMTCT guidelines when planning a family, where women who are over at least 30 years of age should be aware of the risks of having a child at that age (PMTCT, 2012). Like older men, older women are at higher risk of having a child with autism and Down syndrome. They also have increased chances of having multiple births increases, which cause further late-pregnancy risks, developing gestational diabetes, the need for a Caesarian section is greater, and their bodies are not as well-suited for delivering a baby. The risk of prolonged labor is higher. Older mothers have a higher risk of a long labor, putting the baby in distress (UNAID, 2013).

Knowledge and Integration of FP and VCT, PMTCT, and ART Programs helps the mothers identify existing FP information and services as well as determine their desires and attitudes for family planning within the context of VCT, PMTCT, and ART. This integration in addition helps identify operational barriers, gaps, and constraints affecting the provision of family planning (Sweeney *et al.*, 2012).

In a study on the Integration of Family Planning and VCT/PMTCT/ART Programs in Uganda, most of the People Living with HIV/AIDS (PLHAs) expressed desire for integrated HIV/AIDS and FP services, preferring to receive FP services at the same places they receive HIV-related services and from providers who already know much

about their personal lives and appreciate the wide range of problems clients face when trying to access other suitable FP methods. In addition, Providers noted that they often urge HIV-positive clients to limit their sexual activity to avoid deterioration of their health. However, many clients misconstrue this to mean that they should not be having sex because they are HIV positive and consequently do not ask for family planning (Delius *et al.*, 2010)

The other public Health concern is the case where the mothers are not on any family planning method and are not enrolled in PMTCT programs. Preventing unintended pregnancies among women living with HIV is a critical step towards reducing mother-to-child transmission, and is a core component of the international standards for a comprehensive approach to prevention of mother-to-child transmission of HIV (PMTCT). All women, irrespective of HIV status, need services that can help them make informed reproductive decisions and provide them with contraceptive options, if and when they are desired. By enabling women living with HIV to prevent or delay pregnancies, access to these services could avert HIV infection in infants (WHO, 2013).

These challenges therefore do contribute to the poor uptake of family planning for both HIV and non-HIV cases as evidence from CPGH findings above. One of the ways of addressing these challenges is through the Health care Providers incorporating the latest evidence from research in the instructions for administration and use of the various contraceptive methods (WHO, 2013). Visits to FP clinics offer clients an opportunity for detection and management of RTIs/STIs, and provide a mechanism for early detection and referral for management of cancers of the reproductive organs. FP service providers are expected to integrate these services into their FP counselling. When a client is at risk of contracting or transmitting an STI or HIV, it is important that service providers strongly recommend and make accessible to the client dual protection methods - either the simultaneous use of condoms with other methods, or the consistent and correct use of condoms alone - for both pregnancy prevention and disease prevention (KDHS, 2009).

Several examples demonstrate the overall impact of integrating services. In Nigeria, integration helped to formalize client referrals between family planning and HIV clinics, which, in turn, increased male and female attendance at the family planning clinic and boosted the use of family planning methods (UNAIDS, 2013). In Mumbai, India, the number of clients who received services at HIV/sexually transmitted infection (STI) clinics increased threefold when family planning services were added (FHI 360, 2012). In Thika, Kenya, integration dramatically increased dual contraceptive use among female clients in HIV sero-discordant partnerships. The use of non-barrier methods increased among HIV-positive clients (from 32 percent to 65 percent) and among HIV-negative clients (from 29 percent to 47 percent), while self-reported condom use remained high (FHI 360, 2010).

In the Coast and Rift Valley provinces of Kenya, the use of family planning by women who were receiving HIV care increased from 36 percent to 52 percent following the integration of services (FHI 360, 2010).

A new indicator has been developed to evaluate the family planning component of PMTCT programs. The indicator measures the proportion of HIV-infected women of reproductive age attending HIV care and treatment services with unmet need for family planning (wanting to delay or stop childbearing, but not currently using a method of contraception).

This new indicator is also included among the recommended list of indicators to monitor national PMTCT programs. It provides information on whether women living with HIV have the opportunity to control their fertility if and when they want to, thereby preventing unintended pregnancies (WHO, 2010).

In summary, based on our results and consistent with local and international literature there is suggested unmet need in family planning services and hence attention in follow-up of the reporting of the above new indicator on unmet family planning needs in HIV care services. This may be highlighting a bigger deficiency of other reproductive services that are not and have not been measured in the past.



Further with CPGH results, there was no significant association between HIV knowledge and PMTCT services by clients who sort PMTC services for the first time in CPGH highlighting a need for better dissemination of information on the link between HIV and PMTCT services. This however contrasts a similar study that was done in Rural South Africa where a high level of awareness about HIV/acquired immunodeficiency syndrome (AIDS) was observed among the respondents (99.8%). Like this study, the knowledge about MTCT and PMTCT of HIV was also high, 92.1% and 91.4%, respectively (Olugbenga-Bello *et al.*, 2013). In addition, a study done in North West Ethiopia on the Knowledge and attitude towards voluntary counseling and testing for HIV with 89.9% of the respondents aware that one can check her/his HIV status, (73.8%) knew about the availability of VCT services and (85.5%) specified their willingness to take antiretroviral treatment during pregnancy to protect vertical transmission if they are seropositive (Shitaye *et al.*, 2010)

Patients' knowledge and practices on HIV/AIDS, PMTCT and ARTs have been shown to influence their motivation and uptake of ARVs for PMTCT (Duff *et al.*, 2010). As reported by Wenger *et al.*, (1999), a good level of understanding about HIV by the patient, a belief that ART is effective and prolongs life and recognition that poor adherence may result in viral resistance and treatment failure, could impact favourably upon his/her ability to adhere. Conversely, lack of interest in becoming knowledgeable about HIV and a belief that ART may in fact cause harm adversely affect adherence (Wenger *et al.*, 1999). Previous studies on the continent have found mothers knowledge on PMTCT to be low (Falnes *et al.*, 2010).

Knowledge of HIV, ART and PMTCT could however be influenced by interplay of socio-economic and other cultural factors including clients' educational level (Catz *et al.*, 2009). A higher level of education has a positive impact on patient's ability to adhere to ART. A lower level of general education and poorer literacy may impact negatively on some patients' ability to adhere, and vice versa. Women with formal education are adequately knowledgeable about ART and PMTCT as compared to those without formal education. This could impact positively on their ability to adhere since they understand the ART, PMTCT and the need for them to adhere to

ensure the effectiveness of the drug and also to prevent transmission to their babies when pregnant (Nemes *et al.*, 2009).

There is also the importance of the knowledge on the link between HIV and PMTCT so as to promote early presentation to the clinic. This is according to the UNAIDS, 2013 report which shows significant progress in the area of PMTCT has been made during the past several years in relation to HIV. In 2008, 45% of the estimated HIV-infected pregnant women in low- and middle-income countries received at least some antiretroviral (ARV) drugs to prevent HIV transmission to their child, up from 35% in 2007 and 10% in 2004. In Eastern and Southern African nations, which have the highest rates of infection, coverage with ARVs jumped to 58% in 2008 from 46% in 2007 due to increased national commitment and focused international support. In fact, several countries in sub-Saharan Africa, including Botswana, Namibia and Swaziland, have now achieved the United Nations General Assembly Special Session (UNGASS) goal of 80% coverage with significant reductions in new infant infections. Several other large countries with a high HIV prevalence, including South Africa, Kenya and Zambia, are accelerating progress towards this goal, demonstrating that national scale-up of PMTCT services in resource-limited settings can be achieved. Significant improvements have also been demonstrated in other regions. The percentage of pregnant women with HIV receiving at least some ARVs for PMTCT in Latin America increased from 47% in 2007 to 54% in 2008, and in the Caribbean from 29% to 52%. In Europe and Central Asia, coverage jumped from 74% in 2007 to 94% in 2008 (WHO, 2010).

Another interesting finding from the CPGH results was that compared to ARVs as a method of prevention of mother to child transmission, the knowledge that exclusive breastfeeding and exclusive replacement feeding was significantly lower by about third suggesting most of the clients knew of ARVs as the only option hence the need to highlight these other methods as equally effective. This is in contrast with a study that was done in Zimbabwe which revealed that the majority, (88%), were able to define exclusive breastfeeding as a method, though (74%) practiced exclusive

breastfeeding. On the dangers of mixed feeding, (74%) were knowledgeable on the risk of MTCT (Homsy *et al.*, 2010)

According to WHO (2010), previously health workers were obligated to provide mothers with all the options for infant feeding, often overloading them with HIV information coupled with ARV education. WHO now recommends that pregnant women and mothers known to be HIV-infected should also be informed of the national or sub-national recommendation for infant feeding in the context of HIV and that alternatives exist which a mother may choose to adopt if she wishes. Health workers may summarize and communicate the basic evidence in support of the recommended option for infant feeding. In addition, information on the infant feeding alternatives to the national or sub-national recommendation can be communicated through general health messaging or group sessions at health facilities, so that individual counseling sessions can focus on improving infant feeding practices rather than the decision of what infant feeding practice to use (WHO, 2010).

Therefore, if mothers are provided with more options, it is likely that there will be improved adherence, improved efficacy upon combination of ART and any of the other two feeding options and this will result into overall improved uptake of PMTCT services.

Consistent with PMTCT guidelines, majority of the patients were not started on ARVs during the first visit which is one of the experiences of the patients in the care environment. This is in contrast to a similar study done in Zambia where the majority (73.0%) of women identified eligible for ART were initiated on ART during the first visit; however, a minority (11.3%) of HIV-positive pregnant women were assessed for CD4 count and had their test results available. Factors associated with implementation of more efficacious ARV regimens include timing of blood-draw for CD4 count and capacity to initiate ART onsite where PMTCT services were being offered (Mandala *et al.*, 2010).

PMTCT Guidelines Kenya 2012 indicate all pregnant woman attending antenatal care clinics should be given a HIV test on their first visit unless they specifically decline to be tested. Women who test HIV-negative should be offered a follow-up test at 34 weeks pregnancy. Those who test HIV-positive should be offered a CD4 count and viral load test at the time of their diagnosis and should be invited to join the government's free PMTCT programme.

Furthermore, it is recommended that all pregnant women enrolled in the PMTCT programme who do not yet qualify for ART should receive a course of antiretroviral medicine (AZT) from 14 weeks (amended in 2010 guidelines from 28 weeks) of pregnancy until labour in addition to a single dose of nevirapine (a different type of antiretroviral medication) during labour (PMTCT Guidelines, 2012).

Further with the PMTCT guidelines, all HIV-positive mothers with a CD4 count below 350 cells/mm<sup>3</sup> will now be initiated on antiretroviral treatment (ART) themselves. This will usually only start after the first three months of pregnancy (unless her CD4 count is very low) and will then continue for the rest of her life. Previous to this, pregnant mothers were only started on ART if their CD4 count dropped below (PMTCT Guidelines, 2012).

On the other hand, based on the CPGH results, a significant positive finding was that majority of the patients had their results explained. This could influence a positive uptake of other PMTCT services for instance ART, FP, and nutritional services that may be linked to a positive test result. This is supported by a study done in Uganda where participants in the intervention arm (consisting of post-test counseling by trained counselors) were 80% more likely to accept (take up) pre-ARV care compared to those in the control arm (consisting of ARV clinic staff who lack basic training in counseling skills) (RR 1.8, 95% CI 1.4-2.1) (Nakanjako *et al.*, 2007).

Further with CPGH results, less than 5% of the patients did not have confidentiality explained and post-test counselling done, although this is a small number, this is a patient right and therefore should be re-enforced. Although the average 2 percent

seems too small, from a public health perspective, these are very large numbers of persons in the eventual population and thus a public health concern. For instance assuming a population of 10 million, 200,000 women will be denied this right.

The importance of explaining of test results, confidentiality, pre and post-test counselling, and disclosure of test results to partner is supported by a study that analyzed qualitative and quantitative reports from PMTCT clients to assess the quality of information provision and counselling for PMTCT in Burkina Faso, Kenya, Malawi and Uganda (Hardon *et al.*, 2012). The findings of this study were that majority of pregnant women attending antenatal care (80-90%) reported that they were explained the meaning of the tests, explained how HIV can be transmitted, given advice on prevention, encouraged to refer their partners for testing, and given time to ask questions. The qualitative findings revealed that some women found testing regimes to be coercive, while disclosure remains highly problematic. 79% of HIV-positive pregnant women reported that they generally keep their status secret; only 37% had disclosed to their husband (Hardon *et al.*, 2012)

HIV testing practices have changed dramatically since the advent of large-scale antiretroviral treatment (ART) programs, with provider-initiated HIV testing and counselling programs now commencing many more people on treatment (UNAIDS/WHO, 2004). Recent studies in Africa report very high rates of consent for HIV testing within PMTCT programs (Nakanjako *et al.*, 2007).

The patient's right to confidentiality, pre and post-test counselling, consent and explaining of results is supported by several studies.

A qualitative study in Malawi unveiled a variety of institutional and cultural factors behind the low uptake of PMTCT. Some of the findings were that the women were unprepared for HIV testing and this had its implications before visiting the antenatal clinic. The factors included fear of stigma, discrimination, household conflict and divorce upon disclosure of HIV status and husbands opposed to testing (Bwirire *et al.*, 2008).

HIV testing practices have changed dramatically since the advent of large-scale antiretroviral treatment (ART programs), with provider-initiated HIV testing and counselling programs now commencing many more people on treatment (UNAIDS/WHO 2004). Recent studies in Africa report very high rates of consent for HIV testing within PMTCT programs (Nakanjako *et al.*, 2007).

A study in Abidjan, Côte d'Ivoire, found underlying mistrust in health facilities and disbelief in test results to be contributing to the low uptake of prophylactic drugs in an antenatal clinic (Painter & Diaby *et al.*, 2008). Another study in Kenya, (Delva *et al.*, 2006) attributed the low quality of PMTCT counselling, with crucial topics such as partner involvement and follow-up support covered haphazardly (Delva, 2006). Creek and Ntumy *et al.*, (2007) observed that Post-testing counselling in a study in Botswana evaluated pregnant women for ARV therapy but neglected their psychosocial needs.

The 2008 Kenyan HIV Testing Counselling (HTC) policy states that client information cannot be shared without their consent. But the policy--citing evidence that switching from anonymous to confidential HTC does not negatively affect the uptake of HTC services (NASCO, 2008)--also states that names rather than codes can now be used in client records to facilitate referral.

The importance of confidentiality is further highlighted in the same study of women's views on consent, counselling and confidentiality in PMTCT (Hardon *et al.*, 2012) where most HIV-positive women (79%) reported that they generally kept their HIV status secret (UNICEF 2003). In addition, the large majority (85%) felt that the health workers and counsellors respected their desire for confidentiality by protecting their results (Hardon *et al.*, 2012).

During explaining of the test results, the HCP should encourage HIV-positive individuals to disclose to sexual partners. The 2008 Kenyan HTC policy states that HTC workers should support their clients to disclose to sexual partners and that "if efforts to encourage the client or patient to disclose their HIV status fail, and the

client or patient is placing a sexual partner or other person at risk, a medical practitioner may disclose someone's HIV status to their sexual partner or other person at risk" (NASCO, 2008). Refusal to notify one's partner is thus considered an infringement of the partner's right to health and well-being (Burkina Faso Ministry of Health, 2008).

The risk of intimate partner violence is a crucial issue that needs to be addressed in PMTCT programs. *Enacted* stigma is still prominent among HIV-positive pregnant women in Sub-Saharan Africa, despite the widespread availability of ART. Roura *et al.*, (2009) point out that this is due to ART availability only marginally affecting the discourse of blame that lies behind enacted stigma (the authors argue that self-stigma has declined). Women who test positive in PMTCT generally find out when they are not yet ill--earlier than their male sexual partners who tend to be tested when a health worker suggests a diagnostic HIV test. Many HIV-positive pregnant women thus fear being blamed for introducing the infection into the family (Roura *et al.*, 2009). A study in rural Malawi found that some women waited until their husband showed signs of illness before disclosing their positive status (Parrott, *et al.*, 2011).

Therefore, a positive finding that should be encouraged is provision of privacy during provision of PMTCT services coupled with explaining of test results, confidentiality, pre and post-test counselling, and disclosure of test results to partner.

While the aim is to achieve 100% uptake and zero transmission of mother to child, good client-provider relationship plays an important role in achieving the overall PMTCT goal. According to CPGH findings, where 63% described the patient/provider relationship as good and very good, 4% of the respondents described as this relationship as poor. Inarguably these results need to be explored and remedial action taken.

This CPGH finding is similar to a study in Pretoria, South Africa where a patient-provider relationship scale (PPRS) was developed with two aims (Barrya *et al.*, 2012). The first, to quantify the patient-provider relationship in an antenatal population in a resource-limited setting and provide preliminary evidence of its

reliability and validity; and the second, to determine whether the patient-provider relationship has an effect on PMTCT at two major hospitals in South West Tshwane. Statistical analysis showed high reliability ( $\alpha=0.91$ ) and preliminary evidence of its validity including significant associations with participants' attitudes regarding the functioning of the clinics and a single statement (the clinic staff "know me as a person,"  $R=0.47$ ,  $p<0.001$ ) that has been shown previously to have a significant association with adherence to antiretroviral treatment. For HIV-positive participants, the PPRS was significantly associated with statements related to important components of the PMTCT cascade. In addition, those with substantially inadequate antenatal care ( $\leq 2$  visits) and those who did not initiate highly active antiretroviral therapy, although eligible, had significantly poorer PPRS scores.

This is further supported by a cross-sectional study of 489 adult patients receiving HIV primary care at two clinics in Houston, Texas, from January 13-April 21, 2011 where Patients' evaluation of their provider correlated the strongest with their overall satisfaction (standardized  $\beta = 0.445$ ,  $p<0.001$ ) and accounted for almost half of the explained variance (Dang *et al.*, 2012).

To further reinforce the significance of a good client-provider relationship, a study was conducted to assess clients' satisfaction with PMTCT services on privacy, waiting time and counseling in PMTCT of HIV /AIDS in Dodoma Rural district where out of 113 clients' who accessed PMTCT services, 75.2% were satisfied with the counseling provided. Nearly a quarter of the clients who accessed PMTCT of HIV services were not satisfied with the privacy in the settings providing the service. It was also found that 71.7% of clients accessing PMTCT of HIV service were satisfied with the waiting time spent for the service. Some of the reasons contributing to dissatisfaction included inadequacy in individual counseling, inadequate on site test supplies and equipment and cost incurred when travelling to seek for PMTCT service from a referral facility (Lyatuu *et al.*, 2008).

To be successful, PMTCT programmes for HIV must include strategies to reduce stigma by engaging opinion leaders at the community level, normalize HIV and



facilitate access to services by women living with HIV. Programmes must also strengthen the relationship between the formal health system and community organizations to expand HIV prevention services and treatment literacy and preparedness. In this context, community health workers play an important role in increasing the uptake of PMTCT services by providing information on access to services, expanding treatment literacy related to the use of ARVs, supporting treatment preparedness and adherence, and encouraging positive prevention and disclosure of HIV status. In Kenya, for instance, community health workers successfully provide follow-up services for people receiving ART (WHO, 2010–2015).

## **CHAPTER 6:**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **6.1 Summary**

Independent predictors of utilisation of PMTCT services in CPGH were age, previous delivery in CPGH and family planning use highlighting that services provided elsewhere in hospital influence uptake of PMTCT services.

There was poor HIV knowledge especially in those who sought for PMTCT services the first time in CPGH. Although most clients interviewed rated the PMTCT services highly, we noted that clients who had previously sort reproductive health services in CPGH were less likely to seek PMTCT services in CPGH suggesting potential bad experiences in the past. There was poor uptake of family planning services in first time users of PMTCT services. Almost all patients were happy with provider-client interaction and privacy provided.

#### **6.2 Conclusion**

There was poor HIV knowledge especially in those who sought for PMTCT services the first time in CPGH. Therefore to promote better uptake of PMTCT services and PMTCT related reproductive services like family planning, innovative strategies in dissemination of information will be required to ensure adherence and early presentation to the clinic as well as the understanding of the various ways of preventing mother-to-child transmission. Secondly, although most clients interviewed rated the PMTCT services highly we noted that clients who had previously sort reproductive health services in CPGH were less likely to seek PMTCT services in CPGH suggesting potential bad experiences in the past. Lastly, almost all patients were happy with provider-client interaction and did seem to have any preference of certain provider profiles meaning that all health care providers are adequately trained to provide these services

## **6.3 Recommendations**

### **To CPGH**

- Better approaches to education and dissemination of information on PMTCT services are required since no association was identified between HIV knowledge and PMTCT services by clients who sort PMTC services for the first time in CPGH highlighting a need for better dissemination of information on the link between HIV and PMTCT services
- To investigate factors influencing the clients who had sort reproductive health services in CPGH to not seek PMTCT services within the facility. This can be done by undertaking exit interviews and overall assessment of the health care environment despite a good provider-patient relationship been reported in the study.

### **TO MoH**

- There is need to open more referral centres for HIV services to reduce the distance and cost required to access specialised services evidenced by 9% and 10% of patients travelling for more than 2 hours and spending over 200 shillings in transport respectively.
- To explore factors that explains the poor uptake of family planning services among women who are sexually active and probably in a relationship and therefore should be on a family planning method since the mean age of the clients in this study was 30 years with less than half having used a family planning method.
- To educate women on HIV/AIDS and to prevent mother to child transmission.

### **To researchers and Academicians**

- There is need for more research to describe the cost effectiveness and clinical impact of HBCT especially from a PMTCT perspective, following the

success of HBCT and its potential for scaling up to enable large numbers of individuals to know their HIV sero-status in sub-Saharan Africa.

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## **APPENDICES**

### **APPENDIX 1: INFORMED CONSENT FORM**

**PROJECT TITLE: SERVICE DELIVERY DYNAMICS THAT ARE ASSOCIATED WITH THE UPTAKE OF PMTCT SERVICES AMONG WOMEN ATTENDING ANTENATAL CLINIC AT COAST PROVINCE GENERAL HOSPITAL.**

#### **Introduction**

My name is Adam Kevin Karanja, an MSC student in Public Health at Jomo Kenyatta University of Agriculture and Technology (JKUAT). I am working with my research assistants on the project named above. You are kindly requested to participate in this study because you meet the basic inclusion criteria for the study. We would like to collect information on service delivery dynamics that are associated with the uptake of PMTCT services among women attending antenatal clinic

#### **Purpose of the study**

The main aim of the study is to determine factors influencing delivery of service during the uptake of PMTCT services among women attending antenatal clinic at Coast Province General Hospital.

#### **Procedure**

If you volunteer to participate in this study both verbally and by signing the section at the end of this form, you will be interviewed by trained personnel who will fill the collected information into a questionnaire.

#### **Potential risks and discomfort**

There is a potential risk of loss of privacy and breach of confidentiality. Some of the questions might be uncomfortable and you don't have to answer them if they are causing any form of discomfort.

### **Benefits of the study to the Patients**

There will be no monetary benefits associated with participating in this study except gathering information on the factors that influence the uptake of PMTCT services among HIV Positive women.

### **Benefits of study to the principal investigator**

This study will help yield results on pregnant women's perception of service delivery factors associated with the uptake of PMTCT services at the antenatal clinic in Coast general provincial hospital.

### **Confidentiality of the records**

Any record relating to the patients will be treated with the utmost confidentiality. Your names will not appear in any of the reports from this study. No identity of any specific individual will be disclosed in any public reports or publications.

### **Obtaining additional information**

You are encouraged to ask any questions to clarify any issues at any time or ask questions at any time during your participation in the study. If you later think you need more information you may call:

ADAM KEVIN KARANJA

0722-655 901

P.O BOX 491

RUIRU.



Any concerns or questions regarding the study and you would like to talk to any other person other than the researcher, you are encouraged to contact:

Director ITROMID

P.O. Box 62000-00200

*itromid@nairobi.mincom.net*

OR

The Chairman,

KEMRI, National Ethical Review Committee

P.O. Box 59840-00200

### **Basic of Participation**

- You are being requested to participate in this study.
- Participation is entirely voluntary.
- You are free to withdraw the consent to participate in this study at any time.
- You are free to ask any questions pertaining the study which may not be clear to you after the consent has been explained to you.

### **Signatures**

I, the undersigned have understood the above information which has been read and explained to me by the researcher and I voluntarily consent to participate. I have had the opportunity to ask questions and all of my questions have been answered satisfactorily.

**Name of Respondent .....** **Date.....**

**Signature.....**

I, the researcher/research assistant declare that the above has agreed to voluntarily participate in the study.

**Name** ..... **of** ..... **the**  
**Investigator.....Date.....**

**Signature .....**

**Name** ..... **of** ..... **research**  
**assistant.....Date.....**

**Signature.....**

## APPENDIX 2

### SERVICE DELIVERY DYNAMICS THAT ARE ASSOCIATED WITH THE UPTAKE OF PMTCT SERVICES AMONG WOMEN ATTENDING ANTENATAL CLINIC AT COAST PROVINCE GENERAL HOSPITAL. .

#### Structured interview guide for HIV Positive women at the Antenatal clinic

##### (A) Basic information

1. Interview date \_\_\_\_\_
2. Patient's name \_\_\_\_\_
3. Questionnaire number \_\_\_\_\_

##### (B) Socio-Demographic information

4. Age in years
  - a) Below 18 years ( )
  - b) 18-20 years ( )
  - c) 21-29 years ( )
  - d) 30-39 years ( )
  - d) 40-49 years ( )
  - e) 50-59 years ( )
  - f) 60+ years ( )
5. What is your current marital status?
  - a) Single (not married and not living with a partner) ( )
  - b) Married ( )
  - c) Separated/ Divorced ( )
  - d) Widowed/ widower ( )
  - e) Co-habiting (not married but lives with partner) ( )
6. Where is your place of residence?
  - a) Province \_\_\_\_\_
  - b) District \_\_\_\_\_
  - c) Division \_\_\_\_\_
  - d) Location \_\_\_\_\_
  - e) Estate \_\_\_\_\_

**(C) Socio-Economic status**

7. What is your current employment status?

- a) Farming ( )
- b) Business ( )
- c) Casual ( )
- d) Salaried ( )
- e) Unemployed ( )
- f) Others ( )

8. What is your household monthly income?

- a) Below 3000 ( )
- b) 3001-6000 ( )
- c) 6000-9000 ( )
- d) Above 9000 ( )

9. What is your size of family or no. of people who sleep in your house?

- a) 1 ( )
- b) 2 ( )
- c) 3-5 ( )
- d) 6-8 ( )
- e) More than 8 ( )

**D). Level of education**

10. What is the highest level of education reached?

- a) None ( )
- b) Completed Primary education ( )
- c) Not Completed Primary education ( )
- e) Completed Secondary education ( )
- f) Not Completed Secondary education ( )
- g) University/ college education and above ( )

**E. Information on CPGH**

11. When did you know the facility? Date/ month/ year ----/----/---

Is this your first pregnancy? YES ( ) NO ( )

12. If this is not your first pregnancy, have you previously delivered at CPGH? YES  
( ) NO ( )

If NO, where did you deliver?

.....  
.....

13. What transport means do you use to reach this facility?

a) Walking ( )

b) Bicycle ( )

c) Car ( )

d) Others ( )

14. How long does it take you to reach this health facility?

a) Less than 30 minutes ( )

b) 30 Minutes ( )

c) 30 Minutes – 1Hour ( )

d) 1-2 Hours ( )

e) 2-3 Hours ( )

f) Over 3 Hours ( )

15. How much fare do you spend to get to the health facility?

a) Ksh 10 ( )

b) Ksh 10-50 ( )

c) Ksh 50-100 ( )

d) Ksh 100-200 ( )

e) Over Ksh 200 ( )

16. How much time do you take at the health center?

a) Less than 1 hour ( )

b) 1-2 Hours ( )

c) 2-3 Hours ( )

d) More than 3 Hours ( )

e) Others (Specify)

.....  
.....  
**F. Information on HIV Status**

17. Where were you tested for HIV?

- a) CPGH antenatal ( )
- b) Other hospital antenatal ( )
- c) CPGH VCT facility ( )
- d) Other VCT facility ( )
- e) At CPGH When sick ( )
- f) At other Hospital when sick ( )

g) Others  
(Specify).....

.....  
18. Do you know the HIV status of your husband/partner? YES ( ) NO ( )

If yes what is it? Positive ( ) Negative ( )

19. How did your spouse/partner know about his/her HIV Status?

- a). Own voluntary testing ( )
- b). After knowledge of your HIV status ( )
- c).Routine medical check-up ( )
- d) Others (Specify)

.....  
.....  
20. Do you have protective sex? YES ( ) NO ( )

21. If YES, which method do you use?

- a). Condom
- b). Other (Specify)

.....  
.....  
**G. Information on PMTCT**

22. Do you know what family planning is? YES ( ) NO ( )

23. What family planning methods do you know about? (tick all applicable)

- a) Use of condoms ( )
- b) Use of contraceptives ( )

Others (Specify)

.....  
.....  
.....

24. Where did you get information on family planning from?

- a) CPGH antenatal ( )
- b) Other hospital antenatal ( )
- c) Church ( )
- d) Radio/TV/Magazines (Media) ( )
- e) Friends/Family ( )
- f) Other ( )

25. Is this your first PMTCT services uptake? YES ( ) NO ( )

26. If NO, Where did you take up PMTCT services previously?

- a). CPGH ( )
- b). Others (Specify)

.....  
.....  
.....

27. How does a person get infected by HIV? (tick all applicable)

- a) Sexual transmission ( )
- b) Mother to child ( )
- c) Blood transmission ( )

Others (Specify)

.....  
.....  
.....

28. How can one be protected from getting HIV? (tick all applicable)

a). Use of Condoms ( )

b) Abstinence ( )

c) Been faithful ( )

Others (Specify)

.....  
.....  
.....

29. In what ways can a pregnant woman transmit HIV to her unborn child? (Tick all applicable)

a) During pregnancy ( )

b) During delivery ( )

c) During breastfeeding ( )

Other (Specify)

.....  
.....  
.....

30. What PMTCT services are offered at this health facility? (tick all applicable)

a) Family planning ( )

b) Prevention of HIV transmission ( )

c) HIV testing ( )

d) Pre-test counseling ( )

e) Post-test counseling ( )

f) Mother-to-child transmission of HIV ( )

Others (Specify)

.....  
.....  
.....

31. How can Mother to child transmission of HIV be prevented? (tick all applicable)

a) Administration of ARV drugs ( )

b) Exclusive breastfeeding for six months ( )



c) Exclusive replacement feeding ( )

Others (Specify)

.....  
.....  
.....

**H. Information on Patients experience of the care Environment**

32. Were you explained about the test's confidentiality: YES ( ) NO ( )

33. If YES, did you feel the confidentiality of your test results was well handled?

YES ( ) NO ( )

If NO, Why?

.....  
.....

34. Have you been administered with any ARV drugs? YES ( ) NO ( )

35. If YES, at what stage in your pregnancy were the ARV drugs administered?

a) First Trimester ( )

b) Second Trimester ( )

c) Third Trimester ( )

36. Was any Pre-testing counseling done to you during HIV testing? YES ( ) NO ( )

37. Was any Post-test counseling done to you during HIV testing? YES ( ) NO ( )

38. How many times were you tested for HIV?

a) Once

b) Twice

Others (Specify)

.....  
.....

**I. Information on Provider-Patient relationship**

39. Do you think the healthcare explained your test results in a satisfactory manner?

YES ( )

NO ( )

If NO, why?

.....  
.....  
.....

40. Do you think your questions and queries were answered in a satisfactory manner by the Providers? YES ( ) NO ( ).

If NO, Why?

.....  
.....  
.....

41. Which Healthcare provider do you prefer to be attended by?

- a) Male ( )
- b) Female ( )
- c) An older Provider
- d) A younger provider

Others (Specify)

.....  
.....  
.....

42. Approximately how much time do you spend with your Health Care Provider?

- a) Less than 1 hour
- b) 1-2 Hours
- c) 2-3 Hours
- d) More than 3 Hours
- e) Others (Specify)

43. Are you satisfied with the privacy and counseling provided by the Healthcare provider? YES ( ) NO ( )

If NO, Why?

.....  
.....  
.....

44. How would you classify your provider-patient relationship?

- a) Good ( )
- b) Very Good ( )
- c) Average ( )
- d) Poor ( )
- e) Very Poor ( )

## **KIAMBATISHO 1:**

### **RIDHAA YA MAELEZO NA FOMU YA IDHINI MAONI YA WAJAWAZITO WANAUGUA UKIMWI KUHUSU HUDUMA ZA PMTCT WANAZOPATA KATIKA KLINIKI YA WAJAWAZITO KATIKA HOSPITALI YA COAST GENERAL.**

#### **Kuanzishwa**

Jina langu ni Adam Kevin Karanja, mwanafunzi wa Public Health katika chuo kikuu cha Jomo Kenyatta cha Kilimo na Teknolojia (JKUAT). Nafanya kazi na msaidizi wangu wa utafiti katika mradi uliotajwa hapo juu. Unaombwa kushirikiki katika utafiti huu kwa sababu umehitimu vigezo vya msingi kwa ajili ya utafiti huu. Tungependa kukusanya taarifa juu ya maoni ya wajawazito wanaougua ukimwi kuhusu huduma za PMTCT wanazopata katika kliniki ya wajawazito katika hospitali ya coast general

#### **Madhumuni ya utafiti**

Lengo kuu la utafiti huu ni kukusanya taarifa juu ya maoni ya wajawazito wanaougua ukimwi kuhusu huduma za PMTCT wanazopata katika kliniki ya wajawazito katika hospitali ya coast general

#### **Utaratibu**

Kama utajitolea kushiriki katika utafiti huu aidha kwa maneno au kwa kutia saini sehemu ya mwisho wa fomu hii, utahojiwa na kuulizwa maswali mbalimbali yaliyo kwenye dodoso.

#### **Uwezekano wa hatari na usumbufu**

Hakuna madhara yanayojulikana kuhusishwa na ushiriki wako katika utafiti huu ila tu uwekaji siri wa majibu mtakayo peana katika utafiti huu. Baadhi ya maswali yanaweza kuwa ya kutatiza kwako, lakini ni muhimu kwa ajili yako kuyajibu kwa uaminifu kama iwezekanavyo ili kutusaidia kukusanya taarifa sahihi itakayoweza kuboresha huduma ya afya kwa ujumla.

## **Manufaa ya utafiti**

Hakutakuwa na faida ya fedha itakayohusiana na kushiriki katika utafiti huu isipokuwa kukusanya taarifa juu ya maoni ya wajawazito wanaougua ukimwi kuhusu huduma za PMTCT wanazopata katika kliniki ya wajawazito katika hospitali ya coast general

### **. Manufaa ya utafiti kwa mpelelezi mkuu**

Utafiti huu unatarajiwa kuonyesha matokeo ya sababu ambazo zinahusiana na matumizi ya huduma za PMTCT miongoni mwa wanawake wanaougua Ukimwi.

### **Usiri wa kumbukumbu**

Rekodi yoyote inayohusiana na wagonjwa itachukuliwa kwa usili wa hali ya juu. Majina yako hayataonekana popote katika ripoti za utafiti huu. Hakuna utambulisho wa mtu yeyote utatolewa wazi katika taarifa yoyote ya umma au machapisho.

### **Kupata maelezo ya ziada**

Unahimizwa kuuliza maswali ili kufafanua masuala yoyote wakati wowote au kuuliza maswali wakati wowote katika ushiriki wako kwenye utafiti huu. Kama baadaye unadhani utahitaji habari zaidi unaweza kupiga simu kwa;

ADAM K KEVIN.

0722-655 901

P.O BOX 491

RUIRU

Ukiwa na matatizo yoyote au maswali zaidi kuhusu utafiti na ungependa kuzungumza na mtu mwingine yeyote zaidi ya mtafiti, unahimizwa kuwasiliana na:

MKURUGENZI ITROMID

SANDUKU LA POSTA 62000-00200

ITROMID@NAIROBI.MINCOM.NET

AU

MWENYEKITI,

KEMRI, NATIONAL ETHICAL REVIEW COMMITTEE

SANDUKU LA POSTA 54840-00,200

**Msingi wa Kushiriki**

- Unaombwa kushiriki katika utafiti huu.
- Kushiriki ni kwa hiari kabisa.
- Una uhuru wa kuondoa idhini ya kushiriki katika utafiti huu wakati wowote.
- Una uhuru wa kuuliza maswali yoyote yanayohusu utafiti ambayo hayajabainika kwako baada ya kuelezwa juu ya idhini.

**Saini**

Mimi, msahihi nimeelewa habari ambayo imesomwa na kuelezwa na mtafiti kwangu, nina ridhaa kushiriki kwa hiari. Nimekuwa na nafasi ya kuuliza maswali na maswali yangu yote yamejibiwa kwa kuridhisha.

Jina la kujibu ..... Tarehe

.....

Saini .....

Mimi mtafiti natangaza kwamba msahihi amekubali kwa hiari kushiriki katika utafiti huu.

Jina la mtafiti ..... Tarehe

.....

Saini .....

Jina la mtafiti

msaidizi.....Tarehe.....

Saini.....

**KIAMBATISHO 2:**

**ORODHA YA MASWALI.**

**MAONI YA WAJAWAZITO WANAUGUA UKIMWI KUHUSU HUDUMA ZA PMTCT WANAZOPATA KATIKA KLINIKI YA WAJAWAZITO KATIKA HOSPITALI YA COAST GENERAL, MKOA WA PWANI.**

**Muundo wa kuongoza katika mahojiano ya wanawake wanaougua Ukimwi katika vituo vya huduma ya PMTCT.**

**(A) Habari ya Msingi**

- 1) Tarehe ya mahojiano \_\_\_\_\_
- 2) Jina la Mgonjwa \_\_\_\_\_
- 3) Nambari ya Fomu \_\_\_\_\_

**(B) Habari ya Kijamii na Idadi ya Watu**

4. Umri wa Miaka
- a) Chini ya 18 years ( )
- b) Miaka 18-20 ( )
- c) Miaka 21-29 ( )
- d) Miaka 30-39 ( )
- d) Miaka 40-49 ( )
- e) Miaka 50-59 ( )
- f) Miaka 60 na zaidi ( )
5. Je, hali yako ya ndoa Kwa sasa ni gani?
- a) Kutoolewa ( )
- b) Kufunga ndoa ( )
- c) Kutengwa / achwa ( )
- d) Mjane ( )
- e) Kushirikiana bila ndoa ( )
6. Je, mahali pa kuishi ni wapi?
- a) Mkoa \_\_\_\_\_
- b) Wilaya \_\_\_\_\_

- c) Tarafa \_\_\_\_\_  
d) Eneo \_\_\_\_\_  
e) Kijiji \_\_\_\_\_

**(C) Hali ya kijamii na kiuchumi kwa sasa**

7. Je, hali yako ya ajira kwa sasa ni gani?

- a) Ukulima ( )  
b) Biashara ( )  
c) Mfanyaikazi wa kawaida ( )  
d) Mfanyikazi wa kudumu ( )  
e) Kutokuwa na kazi ( )  
f) Nyingine (Taja) ( )

8. Je, mapato ya kaya yako ya kila mwezi ni pesa ngapi?

- a) Chini ya 3000 ( )  
b) 3001-6000 ( )  
c) 6000-9000 ( )  
d) Zaidi ya 9000 ( )

9. Je, nyumba yako inaishi watu wangapi?

- a) 1 ( )  
b) 2 ( )  
c) 3-5 ( )  
d) 6-8 ( )  
e) Zaidi ya 8 ( )

**D). Kiwango cha elimu**

10. Je, ngazi ya juu ya elimu rasmi kufikiwa ni gani?

- a) Hakuna ( )  
b) Kumaliza elimu ya msingi ( )  
c) Kutomaliza elimu ya msingi ( )  
e) Kumaliza elimu ya Sekondari ( )  
f) Kutomaliza elimu ya Sekondari ( )



g) Chuo kikuu na zaidi ( )

**E. Habari juu ya CPGH**

11. Je, ulijua kituo hiki cha CPGH lini? Date/ month/ year ----/----/---

Je, hii ni mimba yako ya kwanza? NDIO ( ) LA ( )

12. Kama hii si mimba yako ya kwanza, Je, hapo awali ulijifungua katika CPGH?

NDIO ( ) LA ( )

Kama hapana, ulijifungua wapi?

.....  
.....

13. Je, unatumia jinsi gani ya usafiri kufika katika kituo hiki cha CPGH?

a) Kutembea ( )

b) Baiskeli ( )

c) Gari ( )

d) Nyingine (taja) ( )

14. Je, unachukua muda gani kufika katika kituo hiki cha afya?

a) Chini ya dakika 30 ( )

b) Dakika30 ( )

c) Dakika 30 – Saa 1 ( )

d) Saa 1-2 ( )

e) Masaa 2-3 ( )

f) Zaidi ya masaa 3 ( )

15. Je, unatumia takriban kiasi gani cha nauli kufika katika kituo hiki cha afya?

a) Shilingi 10

b) Shilingi 10-50

c) Shilingi 50-100

d) Shilingi 100-200

e) Shilingi Ksh 200

16. Je, unatumia takriban muda gani kufika katika kituo hiki cha afya?

a) Chini ya saa 1 ( )

b) Saa 1-2 ( )

- c) Saa 2-3 ( )
- d) Zaidi ya masaa 3 ( )
- e) Nyingine (Taja)

.....  
 .....

**F. Habari juu ya hali ya HIV**

17. Je, ulijulia wapi hali yako ya Ukimwi?

- a) Kliniki ya waja wazito ya CPGH ( )
- b) Kliniki ya waja wazito ya hospitali nyingine ( )
- c) Kituo cha VCT cha CPGH ( )
- d) Kituo kingine cha VCT ( )
- e) Baada ya kuugua na kupata matibabu katika kituo cha CPGH ( )
- f) Baada ya kuugua na kupata matibabu katika kituo kingine cha afya ( )

g) Nyingine  
 (Taja).....

18. Je, unajua hali ya ukimwi ya mume/mpenzi wako? NDIO ( ) LA ( )  
 Kama NDIO, ni hali gani? Positive ( ) Negative ( )

19. Je, mume/mpenzi wako aligundua aje kuhusu hali yake ya Ukimwi?

- a). Kupimwa kwa hiari yake ( )
- b). Kupimwa baada ya kujua hali yako ya Ukimwi ( )
- c). Wakati wa utaratibu wa kawaida wa matibabu yake ( )
- d) Nyingine (Taja)

.....  
 .....

20. Je, mnatumia kinga na mume/mpenzi wako wakati wa ngono? NDIO ( ) LA ( )

21. Kama NDIO, mnatumia aina gani ya kinga wakati wa ngono?

- a). Mpira
- b). Nyingine (Taja)

.....  
 .....

**G. Habari juu ya PMTCT**

22. Je, unafahamu kupanga uzazi ni nini? NDIO ( ) LA ( )

23. Je, wajua jinsi ngapi za upangaji uzazi? (Majibu yote sahihi)

c) Utumizi wa mipira ( )

d) Matumizi ya dawa za upangaji uzazi ( )

Nyingine (Taja)

.....  
.....  
.....

24. Ulipata wapi habari kuhusu jinsi za kupanga uzazi?

a) Kliniki ya waja wazito ya CPGH ( )

b) Kliniki ya waja wazito ya hospitali nyingine ( )

c) Kanisani ( )

d) Vyombo vya habari ( )

e) Jamii/Marafiki ( )

f) Nyingine ( )

27. Je, hii ni mara yako ya kwanza ya kupata huduma ya PMTCT? NDIO ( )

LA ( )

28. Kama LA, ulipata huduma hii ya PMTCT wapi hapo awali?

a). CPGH ( )

b). Kwingine (Taja)

.....  
.....  
.....

27. Ni jinsi gani mtu huambukizwa Ukimwi? (Majibu yote sahihi)

a) Maambukizi ya ngono ( )

b) Mama kwa mtoto ( )

c) Kwa njia ya damu ( )

Nyingine (Taja)

.....  
.....  
.....  
28. Je, ni njia zipi za kujikinga kupata ukimwi? (Majibu yote sahihi)

- a). Utumizi wa mipira ( )
- b) Kutofanya ngono ovyo ( )
- c) Uaminifu ( )

Nyingine (Taja)

.....  
.....  
.....

29. Je, ni jinsi gani mjamzito anaweza kuambukiza ukimwi kwa mtoto wake aliye tumboni? (Majibu yote sahihi)

- d) Wakati wa uja uzito ( )
- e) Wakati wa kujifungua ( )
- f) Wakati wa kunyonyesha ( )

Nyingine (Taja)

.....  
.....  
.....

30. Je, ni huduma zipi za PMTCT zinazopeanwa katika kituo hiki cha afya? (Majibu yote sahihi)

- g) Jinsi za Kupanga uzazi ( )
- h) Jinsi za kuzuia uambukizaji wa ukimwi ( )
- i) Kupimwa Ukimwi ( )
- j) Ushauri kabla ya kupimwa ukimwi ( )
- k) Ushauri baada ya kupimwa ukimwi ( )
- l) Jinsi za Uambukizaji wa ukimwi kutoka kwa mama hadi kwa mtoto ( )

Nyingine (Taja)

.....  
.....  
.....  
31. Je, ni jinsi gani wajua za kuzuia uambukizaji wa ukimwi kutoka kwa mama hadi kwa mtoto ? (Majibu yote sahihi)

- d) Kutumia dawa za ARV's ( )
- e) Kunyonyesha kwa Miezi sita bila kumpa chakula chochote kingine ( )
- f) Kumlisha mtoto chakula kingine bila kumnyonyesha ( )

Nyingine (Taja)

.....  
.....  
.....

**H. Taarifa juu ya maoni ya wagonjwa kuhusu huduma zinazopeanwa katika kituo hiki cha Afya**

32. Je, ulielezwa kuhusu uwekaji siri wa matokeo ya hali yako ya ukimwi kati yako na mhuduma wa afya? NDIO ( ) LA ( )

33. Kama NDIO, je, uliridhika na usiri kati yako na mshauri wako kuhusu matokeo ya hali yako ya ukimwi? NDIO ( ) LA ( )

Kama LA, Mbona?

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34. Je, umepewa dawa za kuzuia makali ya Ukimwi? NDIO ( ) LA ( )

35. Kama NDIO, je, ulipewa dawa hizo wakati upi wa uja uzito wako?

- a) Muhula wa kwanza ( )
- b) Muhula wa Pili ( )
- c) Muhula wa tatu ( )

36. Je, ulifanyiwa ushauri wowote kabla ya kupimwa hali yako ya ukimwi? NDIO ( ) LA ( )

37. Je, ulifanyiwa ushauri wowote baada ya kupimwa hali yako ya ukimwi? NDIO ( ) LA ( )

38. Je, ulipimwa mara ngapi hali yako ya ukimwi?

c) Mara Moja ( )

d) Mara Mbili ( )

Nyingine (Taja)

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**I. Taarifa juu ya uhusiano kati ya Mgonjwa na wafanyakazi wa huduma ya afya**

39. Je, uliridhika na jinsi mhuduma wa afya alivyokueleza matokeo yako ya hali ya ukimwi? NDIO ( ) LA ( )

Kama LA, mbona?

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40. Je, uliridhika na jinsi maswala yako yalivyojibiwa na wahuduma wa afya? NDIO ( ) LA ( ).

Kama LA, Mbona?

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41. Je, unapenda kuhudumiwa na mhuduma yupi wa afya?

e) Mwanaume ( )

f) Mwanamke ( )

g) Mhuduma wa afya aliyekushinda kwa umri

h) Mhuduma wa afya uliyemshinda kwa umri

Nyingine (Taja)

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42. Je, unatumia takriban muda gani ukihudumiwa na wafanyikazi wa huduma ya afya kuhusu matumizi ya PMTCT katika kituo cha CPGH?

- a) Chini ya saa 1
- b) Saa 1-2
- c) Masaa 2-3
- d) Zaidi ya masaa 3
- e) Mwingine (Taja)

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43. Je, umeridhishwa na usiri na ushauri unaopewa na mhuduma wako wa afya?

NDIO ( ) LA

( )

Kama LA, Mbona?

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44. Je, maoni yako kuhusu uhusiano kati ya Mgonjwa na wafanyakazi wa huduma ya afya ni gani?

- a) Bora
- b) Bora sana
- c) Wastani (Kawaida)
- d) Mbaya
- e) Mbaya sana