

Improving utilization of Prevention of Mother-to-Child Transmission of HIV Services in Nairobi, Kenya

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Kenya

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IMPROVING UTILIZATION OF PREVENTION OF MOTHER-to-CHILD TRANSMISSION OF HIV SERVICES IN NAIROBI, KENYA

A thesis submitted in partial fulfilment of the requirement for the degree of
Master of Public Health

BY

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Where other people's work has been used (either from a printed source, internet or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements.

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DEDICATION

This thesis is dedicated to my dear husband Gabriel Kishoyian, my children Willis Kashu Kishoyian and Sheila Naini Kishoyian for their continuous support and perseverance while I was away from home for my studies. May the Almighty God bless you, guide you and protect you all the days of your lives.

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LIST OF ABBREVIATIONS

AFASS	Acceptable, Feasible, Affordable, Sustainable and Safe
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Therapy
ARVs	Antiretroviral
AZT	Azidothymidine (zidovudine)
AZT/3TC	Combivir
DASCO	District AIDS/STI Coordinator
DHMT	District Health Management Team
DMOH	District Medical Officer of Health
3TC	Lamuvudine
CBS	Central Bureau of Statistics
CCN	City Council of Nairobi
CCC	Comprehensive care centre
FBO	Faith Based Organizations
GDP	Gross Domestic Produce
GOK	Government of Kenya
HAART	Highly Active Antiretroviral Therapy
HDN	Health and Development Network
HIV	Human Immunodeficiency Virus
KAIS	Kenya AIDS Indicator Survey
KNASP	Kenya National AIDS Strategic Plan
MTCT	Mother to child transmission
MOH	Ministry of Health
NACC	National AIDS Control Council
NASCOP	National AIDS and STD Control Programme
NGO	Non Governmental Organization
PHMT	Provincial Health Management Team
PMTCT	Prevention of mother to child transmission
WB	World Bank
WHO	World Health Organization
STI	Sexual Transmitted Infection
UNAIDS	United Nations AIDS
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children’s Fund
TB	Tuberculosis
TBA	Traditional Birth Attendants

USAID U.S Agency for International Development
VCT Voluntary Counselling and Testing
ZDV Zidovudine

ABSTRACT

Studies done in Nairobi and Kenya as a whole identified challenges in utilization of Prevention of mother to child transmission (PMTCT) services. This was despite provision of free counselling and testing, antiretroviral drugs (ARVs) and other routine antenatal care (ANC) services in public health facilities, FBOs and most NGOs.

There has been high level of awareness on HIV/AIDS in the population but knowledge on prevention of mother to child transmission of HIV (PMTCT) has been very low in both males and females. Less than 31% had specific knowledge on Prevention of Mother-to-Child transmission of HIV interventions.

Despite Nairobi having the highest number of people with high knowledge and access to information, the HIV prevalence is high at 9.9% with the lowest uptake of infant prophylactic antiretroviral drug (ARVs) at 5%.

Late enrolment of pregnant women to Antenatal Care (ANC) was one of the contributing factors towards inefficient intervention in PMTCT in Nairobi. This was more so in the slums where 60% of Nairobi dwellers live. Some of the reasons identified were lack of health facilities in the catchment areas and poor quality of care. There was low number of male involvement and couple counselling in reproductive health and in particular in PMTCT. Male involvement was found to be critical to improve support for uptake of HIV testing and PMTCT interventions. Infant feeding has been a challenge to both the health care providers and the mothers who are HIV positive. Health workers lack knowledge and skills in counselling on infant feeding. The mothers find themselves in situations where they are not sure of which method to choose as values and culture surround her decision making. Stigma and discrimination in from health workers and the community was identified. Erratic supply of PMTCT drugs and HIV testing kits was identified as well as shortage of staff.

Strengthening of the health system through provision of primary health care and capacity building in the health sector and at the community level, procurement of drugs and equipment, enhancing male involvement in reproductive health, addressing the needs of people with special need, Integration of family planning services in PMTCT and Lessons learnt from other countries will help in addressing challenges in utilization of PMTCT services in Nairobi.

CHAPTER 1: INTRODUCTION AND BACKGROUND INFORMATION

1.1 Geography and Demography

Kenya is situated in the eastern part of Africa. Its neighbouring countries are Uganda to the west, Tanzania to the south, Ethiopia and Sudan to the North and Somalia to the North. To the east lies the Indian Ocean. It is divided into eight provinces and more than 72 districts with a total area of 582,646 square kilometres. Arid and Semi Arid area occupies 80% of the land and is mainly in the Northern and Eastern side while only 20% is arable with good potential for agriculture (CBS 2004)

The population of Kenya was 28.9 million in 1999 and it is projected at approximately 35 million in 2008. The annual population growth rate was 2.9 in 1989-1999 was 2.9% which is estimated to 2.2 (CBS 2004).

Nairobi covers an area of 684 sq km with a population of 2,143,254 (2003) and a projected population of 3,038,600 in 2008. About 60% of the population live in the informal settlement (slums) on a 10% area of land in while 40% live in formal settlement (CBS 2003;CCN 2006).

The slums dwellers are faced with numerous challenges especially poverty, high level of unemployment, poor sanitation, crime and poor health indicators (Fotso, Ezeh, & Oronje 2008).

1.2 Political and Administration Structure

Kenya has enjoyed a stable and peaceful system of governance and political tranquillity since it gained independence in 1963. However, post election violence after 2007 general election resulted to over 1200 deaths and more than 300,000 people were displaced after their houses and properties were destroyed. The most affected provinces were the Rift Valley, Western, Nyanza, Coast and Nairobi. Health care services were disrupted and especially HIV/AIDS continuity of care. In some places the facilities were closed while health worker were not able to go to work their ethnicity. Disruption of ARV adherence posed a risk of viral resistance and manifestation of opportunistic infection (Feikin et al. 2008;CBS 2004;Vreeman et al. 2009) (Taffa & Chepngeno 2005)

1.3 Social and Economic Situation

The Kenyan economy is predominantly agriculture and industry. Agriculture contributes 25% of the gross domestic product (GDP). However, there has been gradual decline in agricultural contribution towards the GDP of 30% to 25% between 1964 – 1979 and 2000-2002.

The industrial sector has increased from 10% of the GDP to 13% the same period (CBS 2004). This decline in economy has been fuelled by external and internal problems such as persistent droughts, low commodity prices, world recession and inadequate infrastructure.

There is deterioration of overall welfare of the population which has led to poverty. Almost 56% of the people live below the poverty level. Other challenges are high child mortality, high rates of illiteracy and unemployment (CBS 2004;WB 2008;WHO 2005a).

1.4 Health care System

The Government of Kenya is the key provider of health care in the country. It consists of MOH, Ministry of local government and parastatals. They control 58% of all health facilities, 52% of all beds and 70% of all health staff. The other stakeholders are of private for profit, FBOs, NGOs and CBOs who control 42% of the health facilities. Traditional medicine practitioners also play an important role in health care services though the MoH has no control over them. These are the herbalists and spiritual healers. The public sector is hierarchical in nature and consists of 6 levels of care. The first level is the community health facilities, level two and three are the dispensaries and health centres respectively, level four are the district hospitals, level five are the provincial hospital and level six are the referral hospitals which provide highly specialised care, research and act as teaching facilities. (MOH 2008b).

1.4.1 Health care system in Nairobi Province

Nairobi is one of the 8 provinces in Kenya. Administratively, it is headed by the Provincial Commissioner. In the health sector, the Province is run by the Provincial Health Management Team (PHMT) which is headed by the Provincial Medical Officer. The District Health Management Team heads the district.

The main provider of health care in Nairobi is the MOH and Nairobi City Council. The two ministries collaborate together to run the health serviced in Nairobi.

The services in the public hospital charge user fees while services in lower levels are offered free (DMOH 2009a). There is an only one district hospital in Nairobi province which handles referrals from 9 districts which were created in July 2009 from the initial 3 districts. Nairobi is served by one major maternity hospital (Pumwani maternity) and several public health centres offering maternity, curative and preventive services

The source of funding comes from the government through the Ministry of Health, City Council of Nairobi, Constituency Development Fund and Non-Governmental organizations (NGOs) (NAS COP 2007c).

Researcher's area of interest

Having worked in Nairobi East District for four years as the deputy district health nurse, and as a DASCO in Nairobi North District for one year, the researcher was directly in charge of reproductive health and HIV/AIDS coordination respectively and has observed some of the constrains in PMTCT delivery services. The reason for selecting this topic is because of the gaps and challenges which the researcher has observed and experienced in Nairobi and would like to identify possible strategies which can be used to improve PMTCT services which is very important in saving lives of children by ensuring that all children born of HIV positive mothers are born free of HIV.

CHAPTER 2: HIV/AIDS PROGRAMME IN KENYA

2.1 Overview

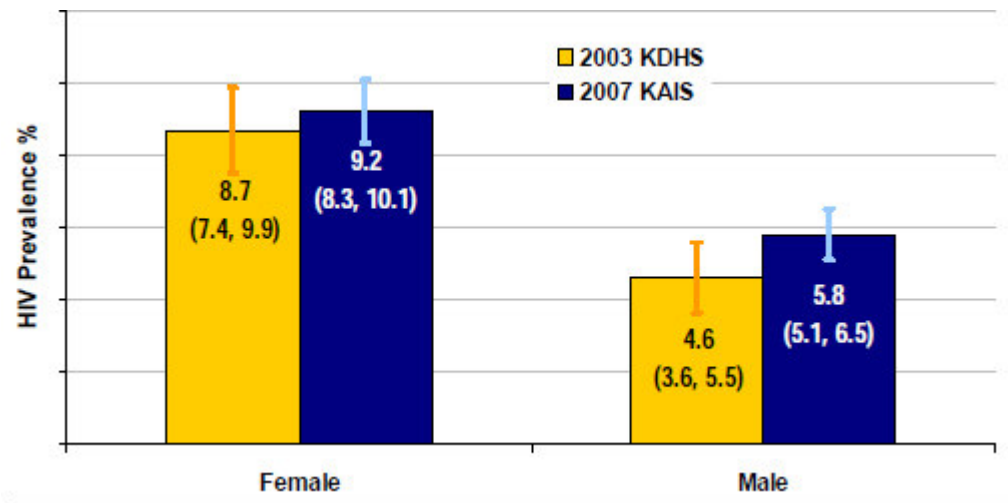
HIV/AIDS is a worldwide pandemic with 33.2 million people estimated to be living with the disease in 2007. Out of these, 2.1 million are children less than 15 years (WHO 2008). It is estimated that about two-thirds of people living with HIV are in Sub-Saharan Africa. The majority of people living with HIV are aged 15-49 years and nearly half of them are women and 60% of them live in Sub-Saharan Africa (UNAIDS 2008). Worldwide, the number of people living with HIV has increased due to new infections and the beneficial effect of availability of antiretroviral therapy (UNAIDS 2008).

The United Nations General Assembly Special Session (UNGASS) declaration of commitment on HIV/AIDS facilitated strategies for commitment to curb the epidemic. This was adopted by 189 countries, Kenya being one of them. This commitment aims to reduce HIV infections among infants and children by 20% by 2005 and by 50% by 2010 (NACC 2008a).

In Kenya, there are approximately 1.4 million people living with HIV (MOH 2007). The HIV prevalence was estimated at 6.7% in adults 15-49 years in 2003 (CBS 2004). However, the 2007 Kenya AIDS Indicator Survey (KAIS 2007) showed an increase in HIV prevalence which is at 7.8% in adults of 15-49 years (MOH 2007). Without interventions approximately 40,000 to 50,000 infants would be infected every year through MTCT (MOH 2008a).

The HIV prevalence was higher in females than in males represented by 8.7% and 5.6% respectively (MOH 2007). This is shown in figure 1 below. Worse still

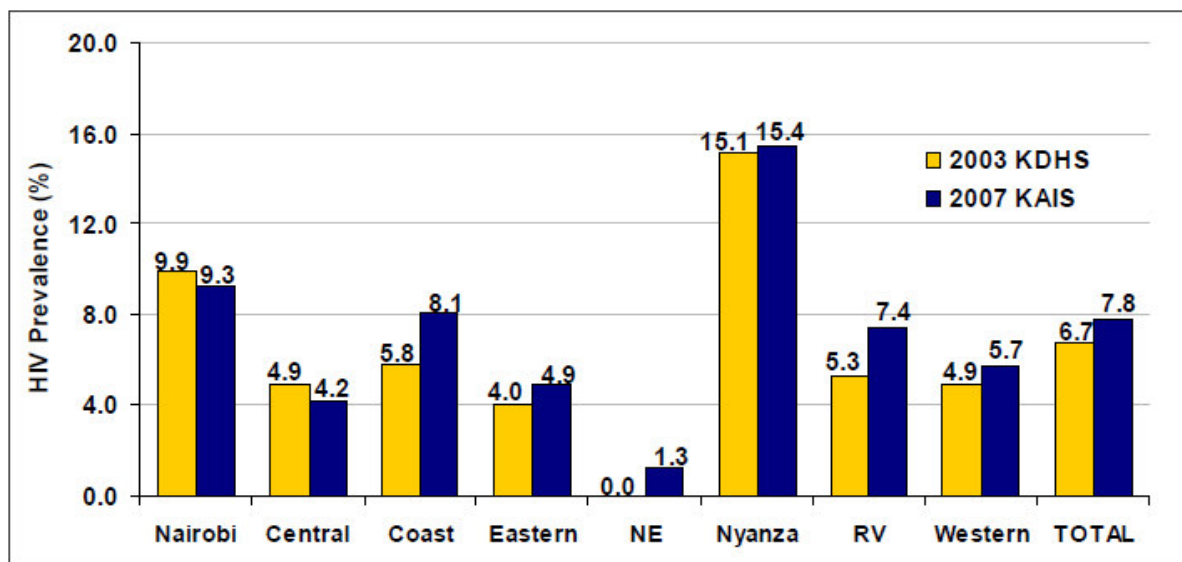
Figure 1: HIV prevalence rates in Kenya



Source: Kenya AIDS Indicator survey (MOH 2007)

Nairobi province had a HIV prevalence of 9.9% in 2007 as compared to 9.3% in 2003 and has the second highest prevalence after Nyanza province which has a prevalence of 15.4% (CBS 2004;MOH 2007). This is shown in the figures 1 and 2 below.

Figure 2: HIV prevalence increased between 2003-2007



Source: Kenya AIDS indicator survey, MOH (2007)

2.2 Organisational structure of national HIV/AIDS programme and country response.

In 1999 HIV/ AIDS was declared a national disaster by the former president Daniel Arap Moi and this facilitated the formation of National AIDS Control Councils (NACC) as a corporate body. NACC was to formulate Kenya National AIDS Strategic Plan (KNASP) to enable strategies to deal the rising HIV infection which was at 13.1% in adults. KNASP was published in 2001. NACC mandate was to coordinate stakeholders and mobilize resources for HIV/AIDS programme. In 2001, it was realised that HIV infection was more in females than in men. This facilitated the formation of a Technical Sub-committee to look into the issue of gender and HIV/AIDS. Studies done suggested that gender roles and relationship played an important role in HIV/AIDS infections. NACC also participates in policy, planning and coordination of health system. In 2002, the Government of Kenya declared "total war on AIDS" (TOWA) (MOH 2002;NASCOP 2007a).

The Ministry of health through the National AIDS and STD Control programme (NASCOP) which is part of the ministry provides leadership in coordination of activities, policy and planning. It also helps strengthen the health system through capacity building, development of guidelines, procurement of drugs and equipment and training (WHO 2005a).

The Kenya National HIV and AIDS strategic plan (KNASP) 2005/6 - 2009/10 was developed to act as a template for national response. This showed the Government commitment to take measures which will enhance reduction of new infections, improve quality of care to the infected and those who are affected by HIV (NACC 2008b).

2.3 Potential impact of the HIV epidemic

HIV/AIDS epidemic has greatly affected the Kenyan economy at the household, community, organizational and national levels. Some of the household and community challenges are increased medical and health care expenditure, funeral expenses and reduced income (CBS 2004).

The number of orphans has increased tremendously and by 2005, there were about 1.6 million orphans (MOH 2005a).Due to this, the community becomes overburdened in care and in most cases, the older generation whose social economic status is low take care of the orphans. Some households are headed by children who are not able to provide the basic needs such as food, shelter, health care and education.

The industry and business sector is faced with decreased produce of goods due to loss of employees through deaths and absenteeism. In a survey done in Kenya, 54.3% of all the HIV related costs within

organizations was due to absenteeism of the people living with HIV and this calls for recruitment and training costs to replace them (MOH 2005a). The loss of people aged 15-49 who are most economically productive through HIV continues to destroy the existing human capital and this contributes towards the decline of national development (CBS 2004;Eduard J Beck 2009).

Worse still children become infected with HIV and die at an early age through MTCT.

The government spends lots of money in prevention, treatment and support of people living with HIV and those affected. This calls for rising of taxes to finance the programme. (CBS 2004;CBS 2004;MOH 2005a).

The health sector has also become overstretched due to high workload. In public hospitals, half of the bed capacity was occupied by people living with HIV. More resources and work force are diverted to HIV programme and this creates shortage in other services (MOH 2005a).There are too many HIV trainings and so health workers spend most of their time in workshops other than at work place. This creates shortage of staff resulting to poor quality of care (Turan et al. 2008a).

2.4 Financing of HIV programme

Approximately 95% of the Kenya's funding for HIV/AIDS programme comes from the bilateral and multilateral donors (NACC2009). The Government allocates some finances and other contributions come from other ministries budget which is disbursed to the National AIDS Control Council. Some of the major donors include the World Bank, United States Presidential Emergency Plan for AIDS relief, Clinton Foundation and United Nations Agencies (WHO 2005a).

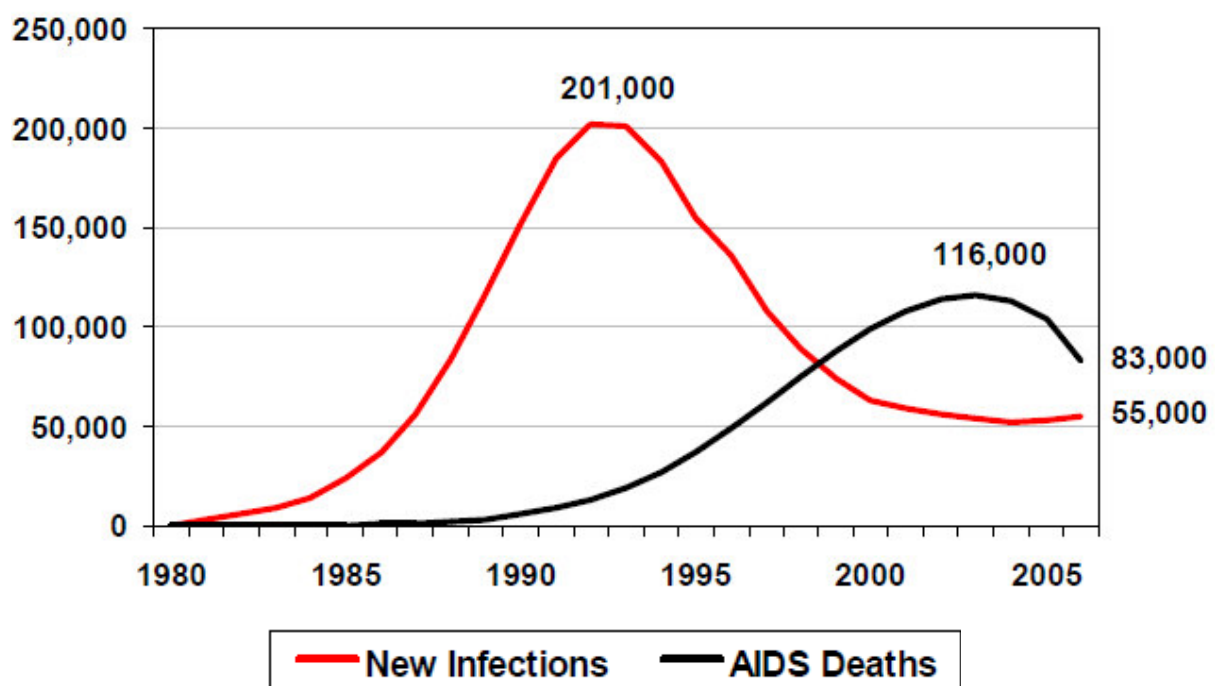
The Government priority in prevention of HIV infection is mainly focussed on Voluntary Counselling and Testing (VCT), Prevention of Mother-to-Child transmission (PMTCT) and condom distribution. Large amount of money is spent on these programmes. However, distribution of these services is based on equity other than on needs and population distribution (NACC 2009).

2.5 Country Progress

There has been an increase in the number of sites in the country from 3 in 2000 to 1000 in 2007. PMTCT services have increased and by 2007, 80% of health facilities were offering PMTCT services. Generally, many

people know their HIV status than before. In 2002 only 1000 knew their HIV status compared to 2 million in 2007. The number of pregnant women accessing PMTCT has increased from 28% in 2005 to 42% in 2006. Access to NVP prophylactic has increased from 39% in 2005 to 52% in 2007 (NACC 2008b). New infections in adults have significantly reduced. In 2004, new infections in adults were approximately 90, 000 compared to 55,000 in 2006. There were approximately 120,000 annual AIDS related deaths in 2003 which have reduced to about 85,000 in 2006 (NACC 2008a).

Figure 3: New adults HIV infection and AIDS deaths, 1980-2006



Source: NACC 2008a- UNGASS 2008, United Nations General Assembly

The Government introduced free ART to people living with HIV in 2005 (MOH 2005b) thus increasing the number of people receiving ARVs. For instance, in 2005 only 60,400 adults were receiving ARVs compared to 172,000 in 2007. ART has improved the health status and reduced morbidity and mortality among people living with HIV (NACC 2008b). In 2003 there were approximately 120,000 deaths in that year which were related to AIDS and this has reduced to 85,000 deaths annually in 2006. Access to paediatric ARV also improved and the number of children on ARVs increased from 4,000 in 2005 to 13,000 in 2007 (NACC 2008b).

CHAPTER 3: PROBLEM STATEMENT, OBJECTIVES AND METHODOLOGY

3.1 Problem analysis of utilization and access to PMTCT in Nairobi

The HIV prevalence among pregnant women in Nairobi is high at 9.9% (MOH 2007). Nairobi is faced with many challenges in PMTCT service delivery despite it being the capital city of Kenya. Many pregnant women are willing to be tested for HIV test but there is low uptake of ARV prophylaxis both for the HIV infected mother and exposed babies (MOH 2007).

Shortage of staff in most the health facilities and high staff turnover in Community based organizations (CBO), Faith based organizations (FBO), and private facilities has hindered effective delivery of services. This has led to many missed opportunities in PMTCT service provision (DMOH 2009b).

The number of deliveries attended by skilled health workers is low Nairobi. Only 42% of births are delivered by skilled birth attendants in Kenya. The others are delivered by TBA and relatives (CBS 2004). According to the National Health Sector Strategic Plan II, 2009/2010, the MOH set targets for percentage of deliveries by skilled birth attendants at 88% but only 40% had been achieved (MOH 2006).

Scale up of paediatric ARVs has been slow and there are only few sites providing paediatric ARVs in Nairobi. Stock out of Antiretroviral (ARVs) prophylaxis is experienced sometimes in Nairobi due to erratic and unpredictable supply of ARVs and HIV testing kits. There is poor access to ARVs as not all those who are eligible for ARVs are put on treatment (NACC 2008b).

Procurement system of ARVs in Nairobi has worsened shortage of drugs since 2008. PMTCT sites which do not have a comprehensive care centre (CCC) have to order drugs through other facilities with established CCC instead of ordering directly from the central stores as before

Lack of CD4 machines and other logistics for assessment of clients and lack of on-site diagnosis for infants is another challenge. Only a few sites supported by donors are able to collect dry blood samples from exposed infants and send to the reference laboratories for analysis (DMOH 2009a).

Male involvement in PMTCT programme in Nairobi is low despite its beneficial increases in uptake in PMTCT interventions (Kiarie et al. 2003b).

Couple counselling has also been low and has affected uptake of PMTCT interventions (NACC 2008a).

Stigma and discrimination towards HIV/AIDS hinders people from accepting HIV testing and uptake of PMTCT interventions (Yebei, Fortenberry, & Ayuku 2008). Majority of Kenyans do not know their HIV status (NACC 2008b).

Lack of disclosure of HIV positive results by pregnant women to their spouses is another challenge towards the uptake of PMTCT intervention. (Neville & Rubin 2007).

Health services infrastructure has been overstretched and there is lack of space for privacy and confidentiality (DMOH 2009a). This might affect the quality of service provision.

The resources for the HIV/AIDS programmes are scarce and the Government relies heavily on the donor funding. This raises the question of sustainability (MOH 2005a).

There has been slow and late disbursement of funds from various ministries and NGOs to the coordinating body (NACC) and this delays the initiation of activities. Transparency of allocation of funds in various NGOs is another challenge (MOH 2005a).

3.2 Methodology

Search strategy and key words

The study is descriptive in nature. Literature review will be used based on studies that have been done in Kenya and in other countries. The reviews will be from:-

1. Library Search- using books and journals
2. Internet search- through Pub Med data base and Google search
3. Ministry of Health and district data, reports and publications

Key words commonly used were:

- HIV, AIDS, PMTCT, Kenya, access, utilization, Prevention of mother to child transmission, Infant feeding, Antiretroviral treatment ,Male involvement, Counselling, Testing Gender

3.3 OBJECTIVES

General objective

To identify factors influencing low uptake of PMTCT services in Nairobi Province and suggest recommendations to the Ministry of health and Local Government for improvement of services delivery.

Specific objectives

- i. To identify barriers which influence access and utilization of PMTCT services.
- ii. To explore the policies and protocols in PMTCT programme that affects utilization of PMTCT services in Nairobi.
- iii. To discuss the roles of traditional birth attendants (TBAs) and community health workers (CHWs) in improving PMTCT services in Nairobi.
- iv. To make recommendations on how to improve access and utilization to PMTCT services in Nairobi.

Study limitations

- It was not easy to get specific data for Nairobi because only few studies on PMTCT have been done in Nairobi. The researcher therefore used national and Nairobi information and data in the findings.
- Some of the national data used are not up to date i.e. the central bureau of statistics which was last done in 2003 as well as the national PMTCT guidelines for 2002. Although there are new guidelines which were developed in 2008, they have not yet been distributed.

3.4 Conceptual Framework for analysis

In this study, the researcher will review studies which have been done in Nairobi, Kenya and other countries. This will help in identifying factors which influence access and utilization of PMTCT and identify needs and

challenges of HIV positive women and exposed babies. Factors affecting access and utilization of PMTCT services in Nairobi Province will be explored. To do this, the Anderson behavioural model will be adopted and modified and used as a guide to analyse the issues surrounding PMTCT service delivery.

Health seeking and utilization Model

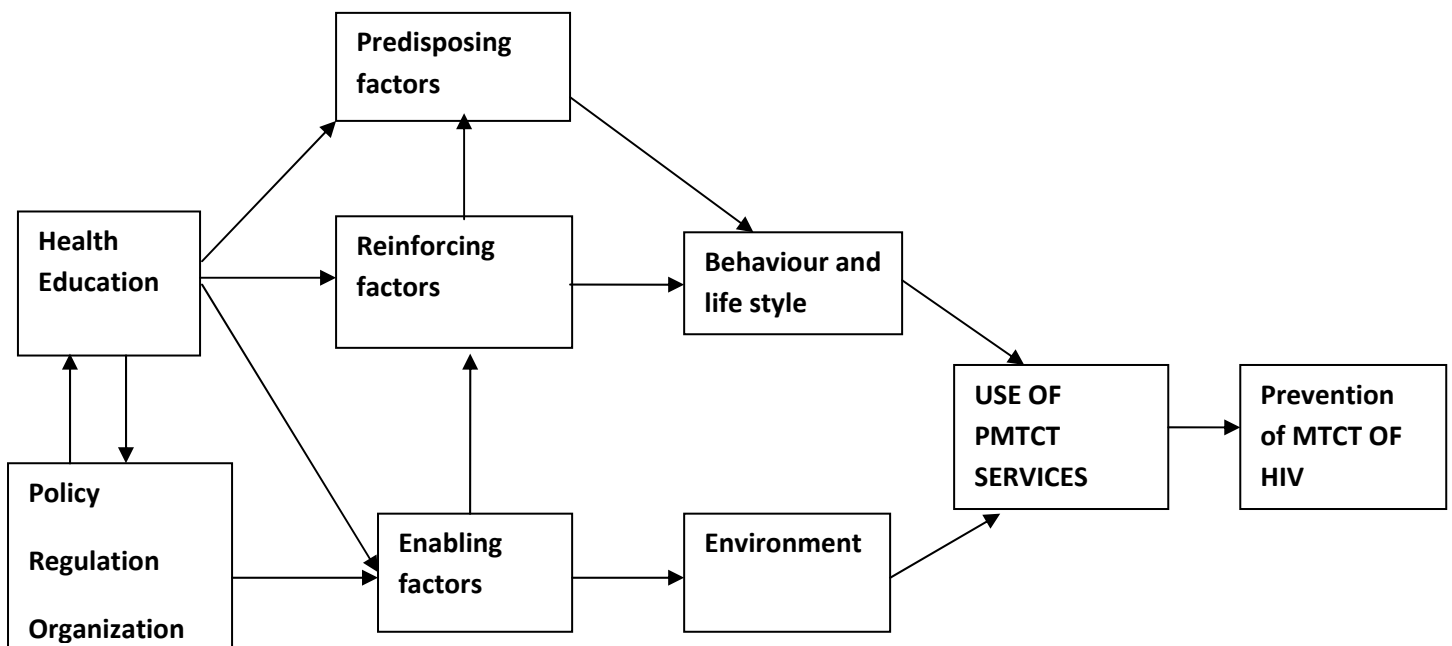
Anderson behavioural model

The researcher will adopt and modify the Anderson behavioural model to help describe issues surrounding PMTCT service utilization. This model has been widely used since 1968 to analyse causal models of personal health care seeking behaviour and in identifying predictors of health care utilization (Kroeger A 1983).

Prevention of mother to child transmission (PMTCT) depends on the use of PMTCT services which also depend on behaviour and lifestyle and environmental factors. These are further determined by predisposing, reinforcing and enabling factors which are further influenced by health education and policies (Green and Kreuter 1999).

Reinforcing factors are not described in the model Anderson behavioural model but have been described by Green and kreuter (1999). The researcher felt that these factors are important because they influence behaviour. These factors are interlinked to each other and therefore there may be overlapping as the researcher explores the factors.

Figure 4: Modified Anderson Behavioural Model



CHAPTER 4: FACTORS INFLUENCING ACCESS AND UTILIZATION OF PMTCT

4.1 Overview

For achievement of universal access and scale-up of national coverage of HIV/AIDS services, several countries have adopted principals geared towards improvement of the services. These include ownership and accountability, participation of community and people living with HIV, partnerships and links, integration of services, delivery of comprehensive package and male involvement (WHO 2007).

Data reviewed for 2004-2005 in low and middle income countries showed that only seven out of 71 countries were moving towards achieving the UNGASS PMTCT goals. However, there was an increase in number of countries moving toward the goal from 58 countries in 2004 to 71 in 2005. During this time, the number of infants born of HIV positive mothers who received ARV prophylaxis increased from 5% to 8%, but only 4% received Cotrimoxazole prophylactic (Luo 2007).

The rate of mother to child transmission has declined in some countries which had very high rates. For instance, In Cambodia, MTCT reduced from 30.5% in 2001 to 11.4% in 2007 and in Rwanda it reduced from 30.5% in 2001 to 8.9% in 2007 (WHO 2008).

Risks of mother to child transmission of HIV at different periods

Mother to child transmission of HIV occurs in utero, during labour and through breastfeeding. The greatest risk of transmission occurs during labour where 10-20% infections occurs (WHO 2007). Without interventions, 5%-20% of HIV infection in infants born of HIV mothers is attributed to breastfeeding. Infection through breastfeeding depends on the health status of the mother, the duration of breastfeeding and the condition of the breast (WHO 2007).The risk of transmission is two times high in newly infected mothers than in previously infected mothers before or during pregnancy (WHO 2007).

The uses of ARVs drugs reduce the viral load replication in pregnant women while pre- exposure prophylaxis reduces the risk of placental

transmission. Post exposure prophylaxis is given to infants after delivery. Use of Highly active antiretroviral therapy (HAART) has reduced MTCT rates to approximately 1% to 2% in high income countries. However, in low income countries the use of HAART is not feasible because of high cost and therefore low cost regimen is used (Volmink et al. 2007).

TABLE 1: estimates of rates of transmission of HIV from mother to child

During pregnancy	5-10%
During labour and delivery	10-20%
During breastfeeding	5-20%
Overall, without breastfeeding	15-30%
Overall, with breastfeeding for 6 months	25-35%
Overall, with breastfeeding for 18-24 months	30-45%

Source: (De Cock et al. 2000)

4.2 BEHAVIORAL FACTORS

Some of the behaviours and conditions associated with mother to child transmission which will be explored include opting out of HIV testing and thus, lack of knowledge and adherence to antiretroviral therapy and recommendations regarding prophylaxis of PMTC, and complying with other peoples beliefs regarding choices on ones reproductive health and rights (Medley et al. 2004).

Women living with HIV have the right to their fertility and sexual reproductive health. However, pregnancy has additional risk towards her health and may have adverse outcomes (WHO 2006a). Contraceptives use reduces unwanted pregnancies and thus reduces the number of infants born with risks of HIV. Studies have shown that despite some women being HIV positive, some would wish to have more children while some would like to avoid pregnancy. This emphasises the need to access reproductive health services and proper counselling to enable them made informed choices (Nebie et al. 2001; WHO 2008).

According to WHO (2006a), health worker should counsel the woman on effective family planning methods. This should include:

- Dual protection from STIs and other strains of HIV and pregnancy.
- Effectiveness of contraceptive especially the hormonal which interact with ARV.
- The risk of transmitting HIV infection to the infant.

Opting –out strategy has increased the HIV testing among HIV pregnant women. In a study done in Zimbabwe, opt-out strategy yielded 99.9% of HIV testing compared to 65% opt-in strategy. This increased the identification of more HIV pregnant women and enhances PMTCT interventions (Chandisarewa et al. 2007). Antiretroviral drugs have reduced MTCT to 1 to 2% in developed countries (Volmink et al. 2007).

Adherence to short course prophylactic ARV reduces MTCT by 50% by reducing the HIV viral load. In a study done in Thailand, there was significant difference in MTCT in mothers who adhered to prophylactic ARVs and those who did not use. In the group who took short course prophylaxis ARVs, there was a risk of MTCT of 9.4% compared to 18.9% in mothers who did not take the drugs (Shaffer et al. 1999).

Some of the strategies which have been successfully implemented to change behaviour for improving health status of African American women and Latin women in America involved a community based interventions through social marketing, media and social mobilization (King et al. 2008). Another strategy was using role models for behaviour change communication. Respected community leaders, professionals and peer groups were used to influence behaviour change. The health sector was implemented new methods of counselling and testing where community based counselling and testing was done (King et al. 2008). Behaviours are primarily determined by individuals. Nevertheless, individuals do not live in a vacuum. Behaviours depends on environmental factors (See figure 4) which will be discussed thereafter.

4.3 ENVIRONMENTAL FACTORS

Some of these factors which will be explored are stigma, distance and geographical location and poverty.

For people living with HIV, the services should be user friendly and not stigmatizing (UNAIDS 2009).

Stigma and discrimination towards HIV/AIDS has hindered access to HIV testing, treatment and care. Factors associated with HIV stigma are very diverse and include low status of women in the society, cultural, traditional and religious beliefs and norms. Fears, shame and silence on HIV lead to new HIV infection (HDN 2006).

Geographical access and distribution of health facilities providing ARVs influences utilization of PMTCT services (WHO 2008). In a study done in Uganda, geographical distribution and number of PMTCT, VCT and ART sites determined access to these services. The municipalities which had 60% of PMTCT facilities achieved 87.5% of the PMTCT target while in poorly and unevenly distributed services, only 21.1% target was reached (Chamla et al. 2007). WHO recommends decentralization and integration of services for better achievements (WHO 2008) while Chamla et al (2007) suggests redistribution to ensure equity.

Similarly, long distances to the health facilities and lack of primary health care discourage clients from utilizing health care. In a study done in Malawi, most clients (66%) got their ARV drugs from the district level while only 8.5% got from the health centres and community level facilities. The clients had to travel long distances to the secondary level and spent a lot of time waiting to be served (WHO 2008). Further studies in Malawi showed that loss to follow up and low hospital deliveries among HIV positive women may have been caused by geographical inaccessibility thus reduced the uptake of PMTCT intervention (Manzi et al. 2005).

In low and middle income countries, human development has been faced with a lot of challenges which interfere with effective service delivery. These challenges include inadequate health worker, inadequate capacity building, poor infrastructure and limited resources.

Shortage of staff has led to poor service delivery in middle and low income countries. Some of the causes which have been identified are lack of employing new staff and brain drain. Countries like Ghana and Zimbabwe has 29% and 34% of their physicians working abroad respectively (WHO 2006).

Some of the incentives which have attracted workers to the developed countries are high remunerations, opportunity for career development and

better working conditions. The low income countries loose staff to other countries due to poor infrastructure which includes poor housing, poor access to health care and lack of schools for children, poor remuneration and lack of opportunities for career development (Lehmann et al. 2008).

Shortage of staff has lead to overload which leads to long waiting time and hence missed opportunities and therefore low utilization of PMTCT services. (Nuwagaba-Biribonwoha et al. 2007).

Poor capacity building has limited knowledge and effectiveness of health care workers on PMTCT. For example in Nigeria, general knowledge of health staff on HIV was rated at 51.4% while 50% of the respondents did not know about the diagnostic testing and factors influencing mother to child transmission of HIV (Ndikom & Onibokun 2007). Lack of self confidence and role conflict among nurses was reported in a study done in Tanzania (Leshabari et al. 2007). These is one of the comments from a nurse-counsellors interviewed in Northern Tanzania:-

We are overworked, and yet even when you are very tired you are expected to remember all the steps required as written in books. Are we computers that remember everything? We need to have something written down to refer to when counselling mothers."

Poverty is another challenge which deters people from utilization of health services. In 2005, WHO recommended countries to improve their health financing to facilitate access to health services for all people (WHO 2005b). In most developing countries, out-of-pocket system has been used to finance health care delivery. However, this has created financial difficulties at the household level making it difficult for people to seek services (Carrin et al. 2008). In a survey done in 89 countries, 13% of households faced financial difficulties while 6% were pushed to poverty due to charges on health services. In some of the low-income countries, community health insurance system seems to be a solution mainly for people working in the informal sector but not without challenges of low enrolment rate, low risk management and regulatory framework (Carrin et al. 2008).

Uganda is one of the countries which tried to implement compulsory public health insurance scheme but failed due to resistance from worker unions which questioned its effectiveness due to already existing poor health facilities and corruption (Kagumire 2009).

Lack of laboratory equipment and supplies of prophylactic ARVs interferes with PMTCT uptake by delays in receiving HIV results. Sometimes mothers and babies are not given prophylactic NVP (Creek et al. 2007). Erratic supply of drugs, late identification of HIV positive women and fear of occupational risk are some of the factors which lead to low uptake of PMTCT (Le et al. 2008). In Vietnam, only 44% of HIV positive women received prophylactic ARVs. Women in labour were not always given NVP despite their HIV zero positivity. This was due to stock outs of NVP for both mother and baby (Nguyen et al. 2008).

Women are often blamed for bringing HIV infection to their male partners and children. This was realised through a study which was done in Peru (Valencia-Garcia et al. 2008). The phrase 'Prevention of mother to child transmission of HIV' which refers to a programme aimed at preventing infection from mother to child seems to intimidate women and making them sole responsible persons in MTCT. In Malawi this was noted and a proposal was made to change the name to 'parent to child transmission' or to any other appropriate phrase (Thorsen et al. 2008).

Breast diseases in HIV positive mothers such as cracked nipples and mastitis predispose the infant to high risk of HIV infection. A study done in China showed that the risk of transmitting HIV from breastfeeding mothers who had these conditions was 31.1% in mothers who did not have breast infection while it was 62.5% in mothers with diseased breasts (Liang et al. 2009).

Infant feeding practices has been a challenge for people living with HIV. This is commonly due to values and experiences, influence from health workers, family and community. In a study done in South Africa, health workers influence leads to mothers changing from one choice to another to suite their condition. Stigma from families and communities made HIV positive mothers who had not disclosed their HIV positive status and had chosen replacement feeding to breastfeed because failure to breastfeed was associated with HIV infection. Others introduced mixed feeding despite having stated exclusive breastfeeding due to pressure from family members (Doherty et al. 2006). This puts the babies at high risk of HIV infection.

Low rate of disclosure among pregnant women hinders implementation of PMTCT interventions. In Tanzania, only 22.2% disclosed their HIV positive results to someone, 16.7 disclosed to their sexual partners while 5.6 disclosed to their relatives. The low disclosure was due to fear of stigma, violence and fear of divorce (Kilewo et al. 2001).

In Zimbabwe, deaths of children associated with HIV infection, makes couples to replace the children by giving birth (Moyo & Mbizvo 2004).

4.4 PREDISPOSING FACTORS

These are factors which predispose or motivate an individual or a group to reason towards certain behaviour. Among the factors which will be explored will be age, gender, income and poverty.

HIV infection in young women between 15-24 years is increasing at a high rate and accounts to 60% of those who are HIV positive in this age group. In Sub-Saharan Africa, young women between 15-24 years have an increased 3 folds of infection than men of the same age (UNAIDS 2004).

Young girls aged 15-19 years and were HIV positive with early premarital pregnancy reported fear of knowing their HIV status, fear of social stigma and negative attitude from health workers. Nearly 81.8% of the ones interviewed said they would not disclose their HIV status despite the knowledge of MTCT. This was a study done in South Africa (Varga & Brookes 2008).

Gender inequality has promoted women vulnerability to HIV due to their low status in the societies (Epele 2002). Gender norms dictates that women are responsible for reproductive activities while men take control of economic resources. This leaves women helpless with less access to resources and employment thus limiting their negotiation powers and coping mechanism with HIV infection (WHO 2003).

Some women have no control over their reproductive health issues. In a study done in Zimbabwe, some of the pregnant women who refused to take HIV test said they had to consult their husbands before taking the test (Perez et al. 2004a).

Literacy is associated with high acceptance of HIV testing. In Nigeria, a study showed that women who had secondary education were 3.6 times more likely to accept HIV testing than women who had informal or no education. Those who had post secondary education were 5.6 times more likely to accept HIV testing than the ones who had lower education (Okonkwo et al. 2007).

People with disabilities have special needs compared to the general population but health care systems are not always responsive to HIV/AIDS information among this group. A study done in Swaziland identified limited information among physically challenged women who are more likely to suffer from sexual abuse and exploitation than the other women. Poor communication between them and the health workers was a barrier to seeking health care (Yousafzai et al. 2004). In East of Scotland, a study revealed that inequality in access of health care services in people with disability was not due to physical access but greatly due to lack of knowledge and poor communication between the people with disability and the health staff (Jones et al. 2008).

Vulnerability to HIV infection in both males and females is associated with poverty and economic positions. Economic growth promotes reduction of new infections worldwide. Economic and gender gaps have generally limited women from accessing health services. The younger women are disadvantaged in accessing of care because they have less power in the community (WHO 2003).

4.5 REINFORCING FACTORS

The health care system could contribute towards access and utilization of PMTCT services by providing free counselling and testing services, free ARV and support in infant feeding options. This motivates mothers to take up interventions which can reduce MTCT. Families and friends can influence ones decision to seek health care or change from harmful practices to healthy practice (Kebaabetswe 2007).

People living with HIV need love and care from family members. This support could include provision of financial assistance, psychological support, help with daily activities and assist the person to disclosure HIV status. Family support reduces stress, anxiety, depression and loneliness (Mohan P & Kamath A 2009).

Health workers caring and supportive attitude was found to promote early uptake of PMTCT interventions (HDN 2006). Health workers good

relationship with pregnant women and good attitude helps to identify current and potential health risks as the health of the mother has a potential impact on determining pregnancy outcomes (Fotso et al. 2009). Health workers attitude influences male involvement in PMTCT. This is important in decision making and support as they mostly determine the health seeking behaviour of women (Theuring et al. 2009).

Provider-initiated testing counselling (PITC) with opt-out strategy was found to be effective in resource limited countries. Health workers recommend HIV testing to all pregnant women who presents themselves to the ANC. This service is voluntary and confidentiality is observed. The pregnant women are given necessary information and helped to make informed choice towards the HIV test. The women are given a chance to opt out. This strategy normalises and destigmatises HIV services and therefore improves HIV testing (WHO 2008). In Botswana, uptake of counselling and testing during prenatal period increased from 67% in 2003 to 92% in 2005 due to introduction of Provider initiated testing and counselling (PITC) (Bolu et al. 2007).

Rapid HIV testing with the same day result increased the number of people counselled and tested by 27% in a study done in Uganda. Same day result was also associated with reduced time and expenses (Kassler et al. 1998).

Contrary to the above, a study done in South Africa in ANC suggested that rapid testing and same day report may not increase uptake of PMTCT among pregnant women. Out of 4,810 women, 166 (3.4%) agreed to receive their HIV results the same day while the rest opted to return at a later day (Mkwanazi et al. 2008).

Access and utilization of PMTCT services do not only depend on policies and staff but also are influenced by community norms and support. Community norms can influence women decision to take HIV test (Bolu et al. 2007).

Women groups in Guatemala helps to empower women to seek health care, discuss their health problems and find solutions. The women learn negotiation skills to negotiate with key decision makers like their male partners and opinion leaders concerning their health (Schooley et al. 2009).

Malaria control programme for intermittent presumptive treatment of malaria in pregnancy has worked quite well in Zambia, Uganda and Tanzania. This has been achieved because of community involvement

which led to acceptance, good integration with other services and active communication campaigns through media (Nikiema et al. 2009).

Religious beliefs contribute towards people's beliefs and attitudes towards HIV. In a study done in Tanzania and Democratic Republic of Congo, despite religious beliefs having significant influence on people's attitude, education and level of knowledge were the main determinants of peoples' willingness to use ARV if found to be HIV infected. These studies further shows that some denominations believed on healing of HIV infection through prayers and these people would not take ARV if found to be HIV positive. However, this group was only 6.3% of the cohort group in Tanzania. Some of them disclosed their HIV status to their spiritual leader for spiritual support (Maman et al. 2009; Zou et al. 2009).

Some cultural and religious norms promote home remedies, self care and traditional medicine instead of medical care. This leads to delay in treatment and interventions for women and children. Some religious beliefs have lead to misinterpretations of health matters (Shaikh & Hatcher 2005). Additionally, pressure on HIV positive women to give birth in some communities ignores the reproductive health rights of women and increases risks of PMTCT (HDN 2006).

Despite the HIV infection risk involved in pregnancy in people living with HIV, 80% of them are in their reproductive age and some would want to have children (Siegel KarolInn and Schrimshaw w 2001).

A study done in Uganda showed that 27% of men living with HIV would like to have more children compared to 7% of women living with HIV.

Among those practicing unprotected sex, 73% did not want any children and therefore they were at risk of unwanted pregnancy. Some of the people living with HIV, 22% believed that women who were HIV positive and were on ARV could not transmit HIV to their infants despite 81% having information on PMTCT (Nakayiwa et al. 2006a).

Similarly in Brazil, 27.9% of people living with HIV desired to have children. However, HIV positive women anticipated strong opposition of getting pregnant from their doctors while men reported lack of knowledge on PMTCT. Gender, number of children, young age and heterosexual relationship had a significant influence on desire to have children (Paiva et al. 2007).

4.6 ENABLING FACTORS

Male involvement in PMTCT has been a challenge to health workers. Strategies to involve men in PMTCT were found to be poor in a study done in Zimbabwe where PMTCT is solely a women's responsibility (Shetty et al. 2008). In a study done in Tanzania, some of the reasons for not participating in ANC/PMTCT services given by men were that they lacked knowledge and information, feared to take HIV tests, lacked time to attend clinic and they did not see the need or importance of their attendance (Theuring et al. 2009).

Couple counselling has been shown to improve PMTCT services and interventions. Women who were counselled and tested with their male partners were 3 times likely to take NVP and 6 times more likely to adhere to safe infant feeding options (Msuya et al. 2008).

Involvement of male partners helps women to access PMTCT services and deal with stigma.

Male involvement reduces domestic violence especially when a woman is HIV positive (de Paoli et al. 2004;WHO 2007).A review which was done in South Africa identified benefits of male involvement as having effective behaviour change and increased use of PMTCT services (Minnie et al.2009). Male involvement can be enhanced by asking women to persuade their male partners to go for testing and encouraging testing in male friendly institutions outside ANC setting (Msuya et al. 2008).

Community participation and including people living with HIV in HIV programmes has been beneficial. In South Africa, a programme known as mother2mother has recruited and trained HIV positive mothers who have given birth and gone through PMTCT services as mentors of newly diagnosed HIV positive mothers. The mother are involved in giving information and support as well as follow-up care of mothers during pregnancy, labour and postnatal. This has increased the number of pregnant women who are tested for HIV, increased uptake of mother and baby NVP, increased number of mothers who choose safer infant feedings practices, improved uptake of family planning methods and improved disclosure (mother2mother 2007).

Other countries where the programme was started in 2008 are Kenya, Rwanda, Malawi, Zambia and Swaziland (mother2mother 2007). A study to evaluate its impact in these countries will be necessary.

In Zimbabwe, community participation helped to achieve 90% in HIV testing among pregnant women. This was achieved through community

mobilization where peer educators and community organization gave education on HIV/AIDS and PMTCT (Perez et al. 2004a).

4.7 HEALTH EDUCATION

Health education influences recognition and demand for health services and has shown significant association with decision making for women towards use health services (UNAIDS 2006).

Health Education is one of the indicators used in achieving the UNGASS goals in prevention of mother to child transmission of HIV (NACC 2008a). Women worldwide lack credible sources of information on sexual and reproductive health. This leads to misconception and lack of negotiation powers and making dialogues concerning sexuality and health (UNAIDS 2006).

In Papua New Guinea, awareness and knowledge on HIV/AIDS which is rated at 88% has influenced acceptance and clarified misconceptions of HIV testing among pregnant women. This has consequently led to improved health seeking behaviour (Allison et al. 2008).

Lack of knowledge and information led to low uptake of prophylactic ARVs in HIV pregnant women in Hanoi, Vietnam. Only 44% of women received ARV prophylaxis and this was due to lack of information and knowledge on PMTCT (Nguyen Th Anh 2009).

To improve health education, suitable channels for communication has to be identified. In Malawi, the government has embarked on community sensitization to normalizing HIV at the community level through local forums, media and outreach education. These channels enhance open dialogue and interactive learning (Thorsen et al. 2008).

“Right to play” programme in Rwanda is involved in sports which is inclusive. This programme creates an opportunity to educate vulnerable people on HIV/AIDS, tackle stigma and values related to HIV and dispel myths (HDN 2006).

For effective allocation of funds to facilitate education and communication on PMTCT programme, it is important to identify important sources of information. A study done in Malawi identified potential stakeholders for information on PMTCT as media which included radios, newspapers and posters.

Other key people are the health workers, pregnant woman's mother and religious gatherings (Tadesse, Muula, & Misiri 2004).

Providing information to couples in ANC was associated with high acceptance of HIV testing and higher uptake of NVP. It also prevented adverse effects of disclosure such as domestic violence. This was shown in a study done in Zambia (Semrau et al. 2005).

China invested in women education to improve utilization of STI services. They formed small groups where they share their reproductive health concerns and were helped to confront and cope with the HIV/AIDS (Guo, Wang, & Yan 2002).

4.8 POLICY, REGULATIONS AND ORGANIZATION

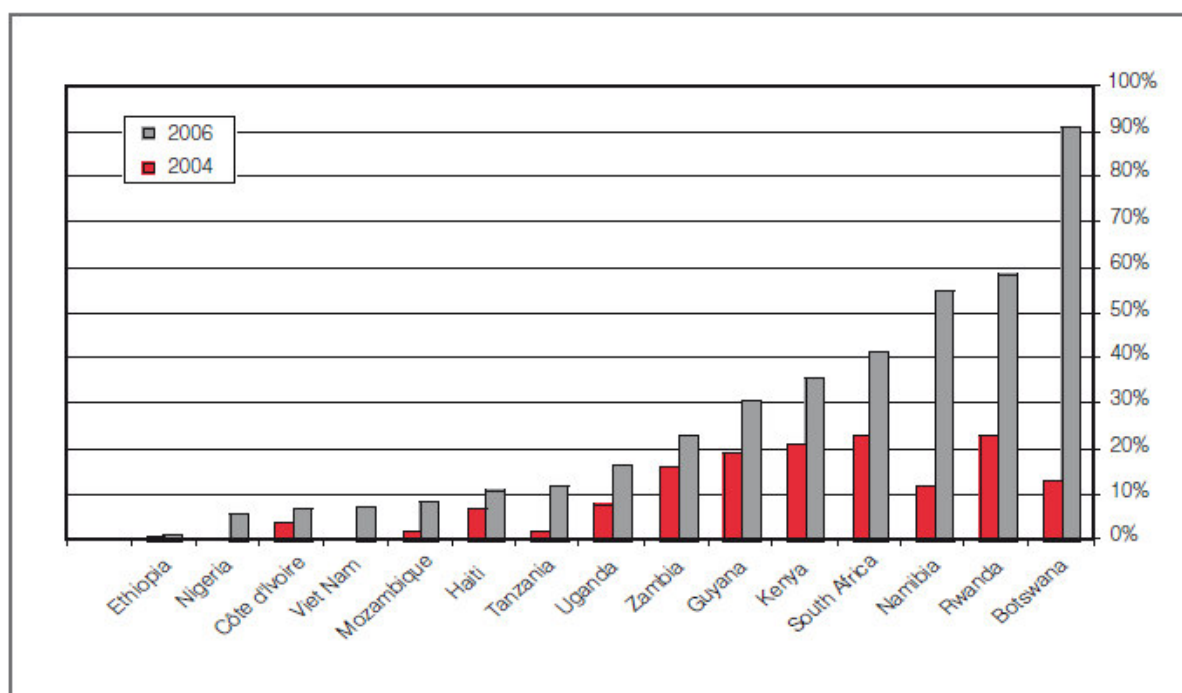
4.8.1 Overview

The main goal of PMTCT is to improve maternal and child survival by promoting access to comprehensive services in order to achieve a HIV free generation by 2015. By 2010, there should be a 50% reduction of new infections in infants. Approximately 80% of women attending ANC should be able to access comprehensive care services to reduce MTCT (WHO 2007).

Access to PMTCT interventions is important in reducing MTCT. Globally, the number of women who received ARV for PMTCT increased from 10% in 2004 to 33% in 2007. Sub-Saharan Africa had the most significant increase as shown in the figure 4 (WHO 2008).

WHO recommends a minimum of 4 ANC visits from the previous 7-10 visits and routine on-site ANC counselling and HIV testing for all pregnant mothers with unknown status. This enhances effective uptake of prevention, care and support (WHO 2007).

FIGURE 5: Percentage of pregnant women living with HIV attending at least one ANC visit who receive ARV drugs for PMTCT between 2004 and 2006 in some chosen countries with high-burden of HIV.



Government commitment is important in implementation of effective HIV/AIDS programmes and in achievement of PMTCT. In Botswana major achievement in PMTCT came as a result of strong commitment by the Government towards the national priority achievement. The government spending on HIV programme is almost 90% of all total expenditure in the programme. This has brought about increase of HIV positive women receiving complete ARV prophylaxis from 60.3% in 2004 to 89.9% in 2007. The number of men and women receiving ARV treatment increased from 7.3% to 62.7% and the number of infants born of HIV positive mothers who became infected decreased from 20.7% to 11.5% the same period of time (NACA 2008).

4.8.2 Access to Antiretroviral therapy

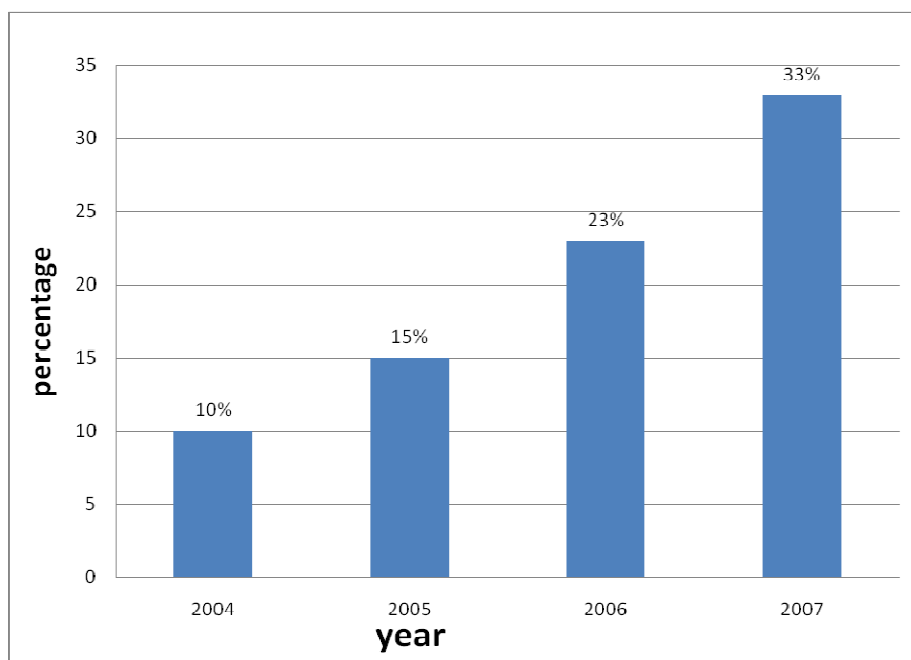
Prophylactic ARV for PMTCT reduces the risk of MTCT. All HIV pregnant women should be able to access ARV for PMTCT (Palella, Jr. et al. 2009;WHO 2004)

In Sub-Saharan Africa, out of 26 of the reporting 77 countries, only 50% of HIV positive women had access to ARVs for PMTCT of single dose NVP,

while 27% received combined ARV. About 6% received HAART prophylactic of combination of three drugs while 9% received ARV for their health. Studies done in Sub-Saharan Africa and Asia show that AZT combined with single dose NVP is more effective than use of single drug in exposed infants (Stover et al. 2008).

However, there has been substantial increase in number of women receiving prophylactic ARV for PMTCT worldwide (WHO 2007).

FIGURE 6: Percentage of pregnant women receiving ARVs in low and middle income countries 2004 to 2007



Source: Adopted from WHO 2008 –Towards Universal access

WHO recommends access to ART for pregnant women to reduce MTCT. Combined regime is more effective than short-course. Women who are eligible should receive antiretroviral for themselves as well as for PMTCT (WHO 2008).

Free HAART reduced HIV infection rate by 53% in Taiwan (Fang et al. 2004). Prophylactic Antiretroviral has reduced MTCT to 1-2% in developed countries (WHO 2008).

Short course prophylaxis of NVP has been found to be effective in PMTCT. However, combined drug therapy of ZDV and 3TC given to the mother

during pregnancy, labour and postal is more effective. The baby is given NVP after delivery (Volmink et al. 2007).

Challenges in ARV therapy includes poor access due to poor integration of HIV services with other services, poor adherence and high cost of drug (Mukherjee et al. 2006).

4.8.3 Infant feeding and nutritional support

Globally, nearly 300,000 children become infected with HIV every year through breast feeding. Newly infected mothers or infection with new strains has an increased risk of transmitting HIV infection from mother to child. Half of the infants get infected during the first six weeks of life (MOH 2008a) (WHO 2007).

Infant feeding counselling and support for HIV positive women is a challenge to health care workers. HIV positive mothers find themselves in a dilemma in choosing the right method for infant feeding (Fletcher, Ndebele, & Kelley 2008).

Cultural norms, gender inequality and poverty are the main barriers towards implementation of proper infant feeding method (Coutsoudis et al. 1999).

Health workers lack proper knowledge on guidance, education and support to counsel mothers on infant feeding (Fletcher et al. 2008). Mother should be provided with information on benefits and risks of each method and empowered to make informed choices (WHO 2007).

In low income countries, WHO recommendation on infant feeding for HIV positive mothers is exclusive breast feeding for six months. In a cohort study done in South Africa, exclusive breastfeeding for six months was 4 to 5 times more likely to reduce the risk of HIV transmission than non-exclusive breastfeeding. Also, early cessation of breastfeeding was found to reduce HIV transmission but the risk of morbidity and mortality increased in exposed infants (Coutsoudis et al. 1999).

Replacement formula feeding is only recommended subject to availability, feasibility, acceptability, safety and sustainability (AFASS). In most Sub-Saharan Africa, replacement feeding is mostly not culturally accepted and therefore mothers who choose formula feeding are faced with social

stigma and discrimination. Not breastfeeding is commonly associated with one being HIV positive (Desclaux & Alfieri 2009;Tijou et al. 2009).

In resource poor setting, poverty leads to constrain of purchase of formula milk which may lead to mixed feeding which increases the risk of HIV infection in infants born of HIV positive mothers. Poor hygiene measure in preparation of formula milk due to shortage of water is common. The time spend to prepare the feeds is also a challenge while feeling of guilt for not breastfeeding is reported by some mothers. (Coutsoudis et al. 2009;Tijou et al. 2009).

Studies have shown that replacement feeding poses higher risk of death among infants than breastfed infants. Almost 1.5 million children die each year because of formula feeds which are contaminated. Children who are breastfed are at least risk of dying (Gaillard et al. 2001;WHO 2007). Kagaayi et al (2008) found the same finding in his study in Uganda.

In another study, of the children who were mixed fed, 24.1% developed HIV. In those who were breastfed, 21.3 % developed HIV, of the ones who were exclusively breastfed, only14.3% developed HIV and of those who did not breastfeed 18.8% developed HIV.

This shows that through exclusive breastfeeding, PMTCT can be achieved while adoption of culturally accepted and cheaper method of infant feeding are achieved (Coutsoudis et al. 1999).

A study done in Zambia and Malawi realised that infant feeding was not given enough emphasis like other components in PMTCT and there was low political support. The nutrition department is weak with few staff and lacks powers to negotiate for funds for the programmes (Chopra et al. 2009a).

Shortage of staff has been identified as one of the major challenges in health care service delivery as earlier discussed in chapter 4 part 4.3. Worldwide, Governments have adopted innovative strategies to help cope with the situation. Since 2007, task shifting has been applied in 28 countries in low and middle income countries. Policies have been developed to allow task shifting from health professionals to trained non professionals. A survey which was done found that the outcome of quality was not compromised by these measures (WHO 2008).

In Ethiopia, Malawi, Uganda and Haiti task shifting strategy have been adopted. Tasks from a highly specialised staff have been delegation to low skilled staff.

In Zaire, some nurses have been trained to perform caesarean section and there was no significant difference in the maternal and neonatal outcome (Duale 1992).

In Cameroon, Tradition Birth Attendants (TBA) have been trained in PMTCT and are able to perform oral fluid rapid HIV antibody test and give NVP to mother and baby. They receive monthly support supervision from Nurse Counsellors and this has lead to a 92.2% acceptance rate of testing among pregnant women. Concerns on breach of confidentiality were ruled out in this survey though it was a concern (Welty et al. 2005).

Community-led strategy where Community health workers (CHW) and peer educators are trained to give simple care and follow up of patients has increased uptake of HIV testing in the community. (Badera Samb 2007).

In Zimbabwe, high attrition of health workers has led to training of peer counsellor (HIV) positive women who previously underwent PMTCT programme training. They are able to do pre and post test counselling, HIV testing, issue NVP and counsel clients on infant feeding. They also do follow up of mothers during pregnancy, labour, delivery and post delivery. This has increased PMTCT uptake (Perez et al. 2004b).

Generally these strategies have to maximize the potential of health care workers (Badera Samb 2007).

Community based health insurance scheme has worked well in Rwanda, Mali, Senegal and Ghana where the government introduced mandatory mutual health insurance scheme which covers 85% of its population. This has improved access and utilization of health services (Twahirwa 2008; Smith & Sulzbach 2008).

CHAPTER 5: CHALLENGES IN PMTCT IN NAIROBI

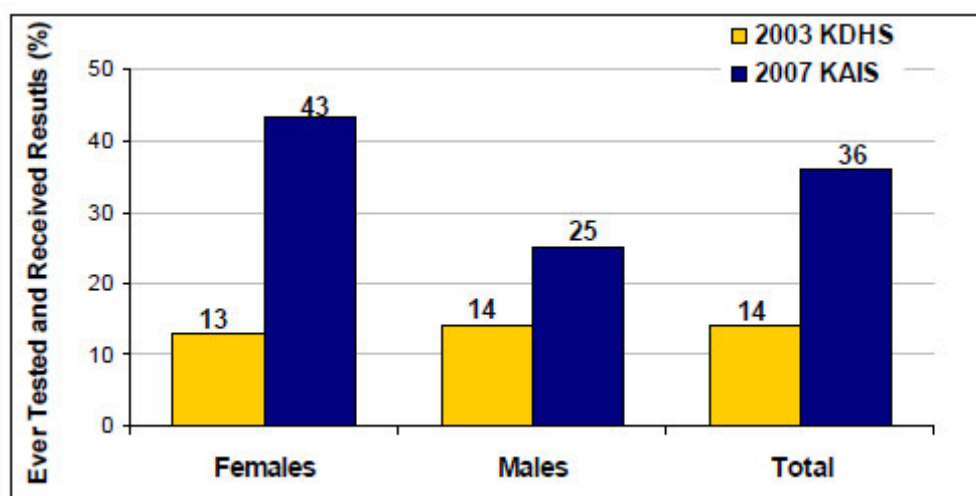
5.1 Overview

PMTCT services were introduced in Kenya in 2000 by the government with the main objective of preventing HIV infections of newborns. The services have been established in most parts of Nairobi. In the KNASP 2005/6–2009/10 the Government targeted to increase PMTCT coverage from 20% in 2003 to 80% by 2007 countrywide. This is in line with the WHO recommendations. Testing, counselling and ARVs services are provided free to mothers who test HIV positive. The ARV Prophylactics coverage has so far increased from 28% in 2005 to 52% in 2007 (NACC 2008a; NASCOP 2002).

The prevalence of HIV in pregnant women in Kenya is 9.6% and it is estimated that in every 10 women, 1 is HIV infected (MOH 2007). Nairobi is ranked the second province out of eight provinces in Kenya with the highest HIV prevalence rate of 9.0%. The highest prevalence is Nyanza with 15.3%. North Eastern province has the lowest prevalence of 1% (MOH 2007).

The HIV testing services are still low in both males and females but have significantly increased between 2003 and 2007. The high uptake in females is due to PMTCT testing. The figure below represents HIV testing in males and females between 15 to 49 years of age by sex (MOH 2007). HIV testing uptake has tripled among women age 15-49 since 2003 and nearly doubled among men.

Figure 7: HIV testing uptake among adults aged 15-49 years in Kenya in 2003-2007



Source: CBS 2003 and MOH 2007 (Kenya AIDS indicator survey)

In Kenya the past efforts to improve child survival have been reduced and the mortality rate has increased in children less than five years. In 1990, the child mortality rate was approximately 97 per 1000 live births and this has gradually increased to 121 per 1000 live births in 2006 due to HIV infection. Majority of the children are infected through Mother to Child Transmission (MOH 2005a; UNICEF 2007).

The Government of Kenya has therefore put in place strategies to reverse this trend through several measures which will be discussed below.

5.2 BEHAVIORAL FACTORS

Poor health seeking behaviour is another important aspect in PMTCT. Only 42% of women deliver in hospital under the care of skilled birth attendant while the rest are delivered by TBA, relatives or by themselves (CBS 2004). Mothers who deliver in hospital have a chance to be tested for HIV if not tested during ANC and given ARV prophylaxis if found to be positive.

Non adherence to recommended infant feeding was also noted in a research done in Kenya. This puts the baby at a higher risk of HIV infection especially where mixed feeding was done (Kamau-Mbuthia et al. 2008).

5.3 ENVIRONMENTAL FACTORS

Uneven distribution of health facilities contribute to inaccessibility leading to low utilization of services in Kenya. PMTCT services, VCT and ART services were found to be more concentrated in low HIV prevalence areas than in areas with high prevalence in Kenya (UNAIDS 2007).

In Nairobi slums, low utilization of maternal health services is partly due to poor distribution of health facilities and poverty among the people. These areas are served by few or no public health facilities. Instead, private owned clinics of which some offer low quality services operate in these areas under limited supervision and women may not afford due to poverty. Distance to facilities which offer maternal health is also a challenge (Fotso et al. 2009).

In 2008, uptake of infant NVP in Nairobi was very low compared to other provinces (NACC 2008a). This is illustrated below.

TABLE 2: NVP uptake in the provinces

Province	CT uptake	ANC% HIV+	ANC NVP uptake	Maternity HIV+	Maternity NVP uptake	Infant NVP Uptake
Central	91%	4%	70%	6%	89%	78%
Coast	97%	5%	76%	18%	74%	37%
Eastern	87%	7%	38%	25%	44%	11%
Nairobi	87%	10%	73%	30%	96%	5%
North Eastern	84%	1%	81%	1%	89%	110%
Nyanza	86%	17%	74%	19%	72%	59%
Rift Valley	86%	8%	44%	12%	75%	48%
Western	75%	6%	51%	10%	104%	39%
TOTAL	87%	8%	62%	17%	73%	39%

Source: collated from NACC data CT: counselling and testing NVP: Nevirapine

HIV diagnosis for infants born of HIV positive mother is not routinely done in Kenya. This has limited the initiation of prompt interventions of PMTCT. Despite the improved access to PMTCT services, a study done in the country showed that of samples taken from the infants born of HIV positive mothers, 15.4% were HIV positive. The cost of HIV testing is quite expensive and ranges from 21.50 USD per test (Khamadi et al. 2008c).

Erratic supply of HIV testing kits and laboratory reagents is common in Nairobi. In the same study, it was realised that poor supply of testing kits was partly due to poor commodity supply chain and bureaucracy. As a policy, HIV testing kits are exempted from import duty in most countries. However in Kenya, the process of exemption is quite cumbersome and it takes long. Some of the commodities could expire before they are exempted. Some of the facilities are very far from reference laboratories. All these delay interventions of PMTCT and initiation of treatment to the infected infants. Results for the dry blood sample usually take time to reach the mothers but this study estimated that the procedure results should be received by the mother within three days (Khamadi et al. 2008a).

Shortage of staff is one of the major problems in Kenya. In 1994, there was a freeze in hiring public workers which resulted to shortage of staff. Other causes of shortage were workers migrated to other countries, high rates of attrition due to unfavourable working condition, poor

remuneration, lack of career development and the impact of HIV/AIDS on health workers. The quality of service delivery has been greatly affected with the increasing workload due to number of HIV patients. The staffing rate has been 50%. In 2008 the UNAIDS through the Government embarked on emergency hiring programme to scale up the HIV/AIDS programme. Approximately 5000 nurses, 1200 laboratory technician and 1000 clinical officer were unemployed and would be available for the work if hires. So far 830 workers have been hired (Adano 2008; Kirigia et al. 2006). Due to the shortage of staff, the civil society of Kenya are now advocating for training of TBAs in PMTCT (NACC 2008a).

Poor quality of services in counselling and testing leads to poor utilization. This may be due to low quality training. In Zambia PMTCT training of health workers takes twelve days while it takes 6 days in Kenya. This leaves a question if the health workers in Kenya get the required knowledge and skills (Chopra et al. 2009a).

A study done in Kenya and other countries identified lack of prioritising feeding programme and lack of privacy as some of the problems experienced in MTCT programme. Ineffective counselling leads to misconception on infection through breast milk (Chopra et al. 2009a).

Inadequate training of staff has led to poor quality of service delivery in Kenya. Techniques to collect dry blood samples for infant diagnosis and skills to use CD4 machines was lacking among laboratory technicians in Kenya. This results to poor management of patients and poor management of commodities (Cherutich et al. 2008; Waako et al. 2009). Elsewhere, nurses and doctors interviewed in three countries which included Kenya said that that they were not comfortable in counselling mothers on infant feeding because they lacked full information on the matter as the messages were not clear which was to be promoted (Chopra et al. 2009b).

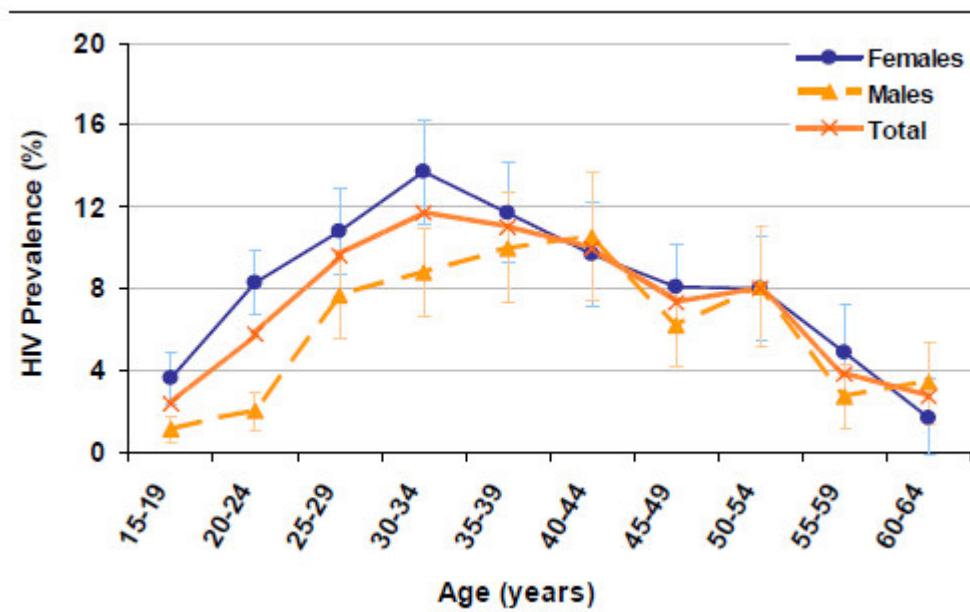
A survey done in Kenya identified shortage of drugs and equipment as a barrier to access testing for children (Khamadi et al. 2008b). Some of the facilities lacked algorithm for Early Infant Diagnosis, job aids and CD4 machines (Cherutich et al. 2008).

5.4 PREDISPOSING FACTORS

Age has been found to be one of the predisposing factors to HIV infection in Kenya. Young women aged 15 to 24 are 4 times more likely to be infected with HIV than their male counterparts (6.1% and 1.5 respectively). People aged 30-34 years are more infected than others age

groups (NASCOP 2008b). Nearly 25% of girls aged between 15 to 19 years were pregnant or had already given birth and 70% of teenagers were engaging in unprotected sex (CBS 2004). Some of the reasons of early sexual debut were poverty, peer pressure and lack of access to sex education and lack of parental guidance. There is poor access to contraceptives for the teenager (Were 2007). This is illustrated in figure 6 below.

FIGURE 6: HIV prevalence and 95% CI among participants 15-64 years by sex and five year age category.



Source: KAIS 2007

In Kenya, stigma and discrimination is a social challenge which discourages women from attending ANC, accepting to take HIV testing, discussion and disclosure of HIV zero status. These have lead to low uptake of PMTCT interventions and safer infant feeding practices (MOH 2005d). Due to anticipated stigma and discrimination among pregnant women, care and support becomes limited. Some go in search of services which are not stigmatising of which may be expensive (USAID 2003).

Stigma from the health workers is also experienced and to cope with this, pregnant women who are HIV positive throw away their ANC cards which has the results, go to other facilities and decline to take HIV test or delivered at home with the help of TBAs (Turan et al. 2008b). Stigma, poor attitude and lack of confidentiality from health providers has contributed towards low hospital deliveries hence low uptake of PMTCT services. In some circumstances, HIV positive women are neglected

during delivery (MOH 2005c). Health workers interviewed during the Kenya health workers survey had this to say:-

'Knowingly, when a mum says they have taken Nevirapine, midwives do not want to deliver them. They give excuses like 'she is not ready to deliver' so that the mum can deliver when [the midwife] is away. The stigma is there'. [Female nurse coast province] (MOH 2005c).

'Health workers have a bad attitude which causes stigma and they do not have confidentiality'. A health worker when attending to an [infected] patient takes more precautions by wearing two gloves as if they are handling a dead body'. [DHTM member, Eastern province] (MOH 2005c).

'A health worker when attending to an [infected] patient takes more precautions by wearing two gloves as if they are handling a dead body'. [Male doctor, Nairobi province] (MOH 2005c).

Health workers working in maternity units were also experiencing stigma from relatives and friends for working in HIV related fields. Fear of HIV infection at work place was also raised by the health worker due to lack of protective materials and gloves. (Turan et al. 2008b)

Some service providers impose their own values when attending to clients. They may become judgemental and condemning especially to client who are suffering from STIs conditions. In this regard clients do not get the right information to prevent future infections (UNAIDS 2006). Treatment of STIs in HIV pregnant women may reduce risk of transmission to the baby especially during vaginal deliveries (NASCOF 2007b). Below is a phrase from one of the female adolescent HIV positive client in Kenya:-

'When I went to the clinic the nurse was very rude and unsympathetic. When I complained that he was hurting me during examination he told me that any woman who can get herself infected with STI should not complain of pain" (UNAIDS 2006).

Culture was one of the challenges in implementation of PMTCT interventions in Kenya. In one of the study in 825 women were enrolled in

of which 26.2% were HIV positive. The HIV positive mothers were put on ZDV from 36 weeks gestation and were followed up for 3 to 4 months. Following the study, 23.6% took the full dose, 31.9 took only the prenatal period dose while 44.4% did not take any drugs. The reason for not complying was due to fear of stigma from TBAs who attended to them during delivery (Songok et al. 2003).

As missed opportunities should be avoided at all, HIV positive women are advised to deliver in health facilities by skilled birth attendants for optimal intrapartum care (NASCOP 2008a). However, most deliveries in Kenya (58%) take place outside the health facility by unskilled birth attendants and relatives (CBS 2004). The TBAs have limited or no knowledge on PMTCT.

Women empowerment is important in decision making on health issues. However, in Kenya, only 40% of women make decisions on their own health while 43% depend on their husbands' decisions. The remaining 17% depend on other people's decisions. The more educated a woman is, the more powers they had in decision making (CBS 2004). Inability for married women to make decisions on their health could also be a factor which could hinder access and utilization of PMTCT services. 43% of women said their husbands made decisions on their health issues (CBS 2004).

In Kenya, some people did not perceive their risks of getting infected with HIV. One third of women and men said they had no risk of getting infected with HIV while only 9% and 5% of women and men respectively thought they had greater risk of infection. Generally women felt more at risk than men. Nairobi, Nyanza and Coast provinces were more likely to report high risk behaviours (CBS 2004).

5.5 REINFORCING FACTORS

These factors support individuals towards change of behaviour. Families and friends can influence decision to seek health care or change from harmful practices to healthy practice.

Public-private partnership and decentralization of HIV/AIDS programme to the district levels has improved access of ARV and PMTCT services in Kenya. This has facilitated free counselling and testing services and ARV in some of the public health facilities, NGOs and FBOs since 2005 (MOH 2005b). This increased the uptake of counselling and testing of pregnant women from 28% in 2005 to 42% in 2006. The NVP uptake has increased from 39% to 52% in 2005 and 2006 respectively. However, despite the

free services, clients incur transport expenses and other opportunistic costs (NACC 2008a).

Facilitation of integration of ARVs in PMTCT through supportive policies and networking systems helps to scale up ARV services (WHO 2007). This will enable to access comprehensive care without unnecessary referrals (NACC 2008a).

Treatment of Sexually transmitted infections (STI) is necessary in reducing MTCT as it is associated with high risk of HIV infection and adverse effects and outcome of pregnancy. Most of the infections are asymptomatic in women and therefore they may not seek medical treatment hence the need for early detection through routine screening and treatment (NASCOP 1997). Lack of laboratories equipment and reagents in most public facilities leads to non diagnosis of STIs diseases. Other challenges in seeking STIs treatment include long distance to the health facilities and lack of transport (UNAIDS 2006).

5.6 ENABLING FACTORS

To ensure proper care and uptake of interventions, male involvement and linkage with community based organizations is important to provide support and resources to mothers who are HIV positive and their families (MOH 2005d).

Men have a role in reproductive health and in promotion of safe motherhood despite the fact that they are seen as being passive and obstacles to reproductive health (WHO 2002). Majority of women would like their male partners involved in their reproductive issues. Men can be good promoters of access and utilization of services by women during ANC, delivery and postnatal period. However, there are no clear policies on male involvement in reproductive health in most countries including Kenya (WHO 2002). Men often lack information as there are no programmes in the health sector which directly target men and they are often not included in programme development. To improve men involvement, they need to be informed through mass media campaigns, individual and group counselling. It is also important to reach them at the community level as they are poor users of public health facilities. Skills on decision making and partner communication are important (WHO 2002).

A research in Nairobi identified ANC couple counselling with an increased uptake of PMTCT interventions though there was low uptake of couple counselling. Among 2104 pregnant women, only 15% of the women came with their male partners to the ANC. The women who were found to be

HIV positive and came with their partners were three times more likely to come back for NVP and to report administration of the drug at birth. Partner participation was associated with high uptake of NVP and use of formula milk for infant feeding (Farquhar et al. 2004).

A research done in Nairobi associated domestic violence with low uptake of PMTCT services. The violence involved physical abuse, psychological abuse which involved emotional pain and withholding of financial. The violence was due to reported STI and was common in polygamous family (Kiarie et al. 2006).

In Kenya, PMTCT programme is seen as a female domain and responsibility. Cultural barrier where men do not feel free in the midst of women and poor health workers attitude where men are not allowed to go in with their partners in the examination rooms contributes to low male involvement. These barriers could be avoided by couple counselling which facilitates shared decision making. (Mbweza et al. 2008;Theuring et al. 2009)

Availability of services could improve access and utilization of ANC services in Nairobi (FHI 2006;Nakayiwa et al. 2006b).

5.7 HEALTH EDUCATION

Generally, there is high awareness on HIV/AIDS in Kenya. Almost 99% of the men and 98% of women are aware of HIV/AIDS (CBS 2004). However, only 28% of women and 30% of men knew of PMTCT strategies. People who had high level of education had better knowledge on PMTCT interventions than those with lower education. The people in high social economic status had better knowledge than those in low social economic status on PMTCT (CBS 2004).

According Central Bureau of Statistics and health survey, illiteracy rate in females was almost two times (21%) that of males (12%). The rural population had a higher illiteracy rate than the urban population at 25% and 12% respectively. Nairobi had the highest literacy rate of 91.8% while the lowest was North Eastern with 6.4%. Wealth was associated with higher literacy levels. This shows that there is gender difference in education as well as urban versus rural access to education (CBS 2004;FHI 2006).

On overall access to information, women were less likely to access information than men. Only 13% of women had access compared to 27% of men. The main sources of information in order of priority were radios, newspapers and television. Nairobi was among the two provinces with the highest access to information for both males and females (CBS 2004). This shows gender difference in access to information.

Adolescents are potential clients for PMTCT. In a study done in Kenya on pregnant adolescents, it was realised that they had less knowledge on HIV prevention than the older mothers. This was represented by 31% and 16% respectively. However, knowledge on mother to child transmission and infant feeding of babies born of HIV pregnant women was low in both groups (FHI 2006). In many Sub-Saharan African countries Kenya included, pregnant women do not receive routine advice on pregnancy complication and therefore the women may not be aware of dangers related to pregnancy and child birth (Nikiema et al. 2009).

In Kenya, most pregnant women came know their HIV status only at the ANC clinic. In a study done in the North Rift Among pregnant women, 85.1% did not know their HIV status before they attended the clinic (Kiptoo et al. 2009).

The UNAIDS associated high level of education and information with demand for health services and thus better access and utilization of health services (Allison et al. 2008).

In the slums of Nairobi, low education level, was associated with low initial enrolment and subsequent attendance to ANC (Fotso et al. 2008).

Most of the counselling and testing sites do not address people with disabilities (NACC 2008b). Only one special programme, Liverpool Voluntary Counselling/testing and Care, an NGO, established three VCT sites in Nairobi in 2004 as a pilot study for the deaf. A survey which was undertaken showed that HIV prevalence rate in the disabled was 7% which was nearly the same as the national prevalence of 6.7% (Taegtmeyer et al. 2009). This shows that the disabled are at risk like the other population and needs special attention to be able to access services.

5.8 The National policies guidelines, regulations and organization of PMTCT implementation

5.8.1 Overview

PMTCT programme is integrated in Maternal and child health clinic (MCH) with the primary objective to reduce MTCT in Nairobi (MOH 2008a). However, there is poor integration of reproductive health and PMTCT. Some of the barriers which were identified during one of the assessment in Kenya were lack of clear guidelines, inadequate budgetary support by the Government, existing parallel supervision and shortage of staff (USAID 2009).

The current PMTCT guidelines and policies have been in use since 2002 and they were revised in 2008 (NAS COP 2008a). However, the revised guidelines are not yet distributed to the facilities.

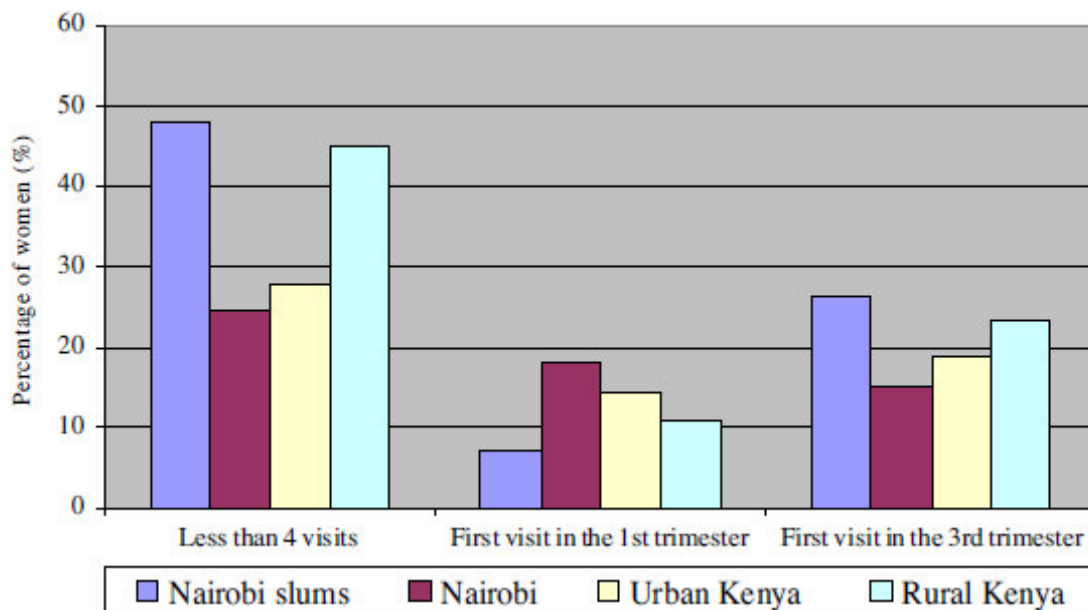
Antenatal clinic

In Kenya the newly recommended Focused Antenatal Care (FANC) have been implemented with a minimum of 4 visits from the earlier recommended 7-10 visits (NAS COP 2008a).

During ANC, group education on individualised care, infant feeding, birth preparedness, family planning and HIV/AIDS management information is provide (MOH 2008a).

A research done in Kenya indicated that only 78 women out of 571 (14%) started attending ANC during their first trimester while 355 (64%) started attending in the second trimester and 126(23%) attended in the third trimester (NAS COP 2008a;van Eijk et al. 2006). Late enrolment is common in Nairobi women reported lack of access to health facilities, poor quality of care and late recognition of pregnancy (MOH 2008a). This may hinder timely PMTCT interventions.

FIGURE 6: Pattern of antenatal care among slum dwellers in Nairobi compared to other population subgroups



Source: Fotso, J.C: Provision and use of maternal health services among urban poor women in Kenya

HIV counselling and testing is routinely offered free to all pregnant women with an opt-out option. This is done in the ANC clinic at the earliest opportunity with the same day result using rapid HIV test. All women found to be HIV positive should receive post test counselling pertaining their results and helped to cope with the situation. This should be done through regular follow-ups. The mothers receive NVP prophylaxis for themselves and for the babies on first contact to avoid missed opportunities. NVP is taken by the mother during established labour and the baby is given within 72 hours after birth (NASCO 2008a).

Due to high workload in public health facilities, the researcher has observed that the services are not individualised because pre-test counselling is done in large groups of about 8 to 20 women. This interferes with openness and confidentiality. The researcher has observed that there is insufficient time for individual post test counselling for each client on positive living and interventions information. At the same time that the client receives the HIV results, she is given information on PMTCT which may not yield much due to the state of shock she may be going through. Health workers experience burn-out due to high workload and this compromises their efficiency. Worse still, some women go home unattended because the health workers are unable to cope with the

workload. Some fail to return and this creates missed opportunities for PMTCT.

5.8.2 ARV Therapy

In Nairobi unlike most parts of the country, the Ministry of Health gradually introduced the use of short course prophylaxis of AZT twice a day as from 28 weeks gestation. During labour, single dose NVP plus AZT/3TC is given. During postpartum the mother continues with AZT/3TC for 7 days. The infant receives single dose NVP within 72 hours, and continues with 3TC for one week and AZT for 6 weeks. HIV positive women should be given baby and mother NVP, 3TC and AZT syrup at first contact to avoid missed opportunities (NASCO 2008a). However, this is not without challenges of erratic supply and stock out of drugs (DMOH 2009b).

With frequent irregular supply of ARV prophylaxis in Kenya, treatment is occasionally interrupted among HIV positive mothers and this poses a great risk of drug resistance. Research has shown that some mothers who only received NVP without AZT developed resistance strains and research is currently being undertaken to determine implications for subsequent administration for the mother's health (Sullivan 2003).

All pregnant women who are HIV positive should be evaluated and if eligible for antiretroviral drugs, they should be started on ART. WHO clinical staging is commonly used to evaluate pregnant women for eligibility of ARVs. However, not all health workers who attend to pregnant women in ANC are trained on ART so the mother has to be referred to the clinician. Immunological staging is used where possible. The recommended initiation for ARV treatment in pregnant women on clinical stage is when a woman is in stage three and four or if CD4 is 340 cells/mm cubic or less. The exposed infants should be started on cotrimoxazole prophylaxis and their HIV status established (NASCO 2008a; UNICEF 2003). This is not always feasible because most primary health care level do not have comprehensive care services and therefore mothers are referred to the secondary level. Other possible intervention to reduce MTCT is through elective caesarean section. This services is not readily accessible to women due to high cost and unavailability of services (NASCO 1997; NASCO 2008a).

5.8.3 Infant feeding in Kenya

Kenya has adopted the WHO guidelines for infant feeding. Exclusive breastfeeding is promoted for mothers who are HIV positive if replacement feeding does not meet the criteria of Acceptable, feasible, affordable, sustainable and safe (AFASS).

For HIV positive breastfeeding mothers, at six months, they are asked to continue breastfeeding and introduce complementary feeds (MOH 2008a). Abrupt cessation of breast feeding is discouraged to avoid trauma for mother and baby (MOH 2008a). This is contrary to the earlier recommendation in the currently guidelines which encouraged abrupt cessation and argued that so long as the baby was breastfeeding, it was at risk of infection. The benefits of abrupt cessation seem to outweigh trauma as the mother and baby could gradually overcome it. The researcher has observed that infant feeding in Nairobi is a big challenge due to poverty level at household level especially in the slums. A study done in Kenya showed that nutrition department was very weak with few nutritionists to offer infant feeding education. The department is unable to negotiate for funds for infant feeding programme. However, some of the money from global funds has been allocated to employ 50 nutritionists who will be deployed across the country. The country has also reviewed the infant and children feeding policies and has incorporated it in HIV programme (Chopra et al. 2009a)

Other challenges in infant feeding are cultural norms. One of the study done in Nairobi among HIV mothers showed that women made infant feeding choices according to the perceived partners' attitude and pressure from relatives. Most of them opted to exclusively breastfeed. The women had to keep their confidentiality and therefore social environment plays a role in the choices women make. The prevalence of mixed feeding was found to be low as compared to other cities that are 31% and 52% respectively (Kiarie et al. 2004). This shows that with good counselling and support, the women can be able to practice exclusive breastfeeding which is culturally accepted and has nutritional effects.

5.8.3 Reproductive Health Needs of HIV positive people

According to the CBS (2004), Many women in Kenya have unmet family planning needs. About three in five would like to space their next birth while two in five would like to limit the number of pregnancies.

Integration of family planning and reproductive health in Maternal and Child health ANC clinic and in PMTCT services has been one of the government strategies to meet the need of HIV positive women. This could increase access and utilization of services by HIV positive women.

In a review which was done in Kenya, 50% of HIV women interviewed said that they did not receive any information on family planning during ANC and post natal period. This shows that there is poor responsiveness towards the reproductive health needs of women living with HIV. Shortage of contraceptive and method mix was also identified. Some of the faith based organizations (FBOs) like the Catholic facilities were not offering contraceptives to women except natural methods even to the women living with HIV (UNAIDS 2006).

A recent survey conducted to evaluate integration of family planning and HIV service found out that there was increased uptake of family planning services and reduced stigma and discrimination in sites which offered integrated HIV/FP services.

There was also increased acceptance of condom use to prevent STIs and pregnancy. Challenges which were identified were lack of government framework and funds for support of the process of integration and lack of national policy and guidelines. There was also parallel HIV and Family planning/productive health programmes with different supervision and logistic systems. Erratic and inconsistency supplies of family planning and HIV commodities was also identified (USAID 2009).

CHAPTER 6: DISCUSSION

Kenya has markedly improved access and utilization of HIV/AIDS services. This has come about as a result of Government's commitment towards the UNGASS goals on response towards HIV/AIDS.

Introduction of free ARV has improved the health status of people living with HIV and has reduces the risk of MTCT. The number of counselling and testing sites has increased making it more accessible to the population. (NACC 2008a).

In Kenya like other countries, access to information is influenced by level of education, gender and sources of information. Generally there is good awareness of HIV/AIDS of over 97% for both males and females but knowledge on PMTCT was low at 30% in males and 23% in females. High education level was associated with high awareness and acceptance of PMTCT services. Despite Nairobi having the highest number of people with high education level and high level of information on HIV, it has a high HIV prevalence of 9.9% and has the lowest uptake of infant NVP at 5%.

This shows that there is a gap in prevention strategies which can lead to poor access utilization of PMTCT services. The research also showed that women lack credible information on reproductive health and they have a low literacy level which limited their access to maternal health services. Important sources of information were the mass media, newspapers and posters. Health worker, mothers to pregnant women and religious gathering were also important sources of information.

Young women were found to be more at risk of HIV infection with high risk of unwanted pregnancies. They lacked access to sexual education and reproductive health services (Nikiema et al.). These are potential clients for PMTCT and efforts to address their needs will reduce the risk of MTCT. Information provided to couples was also associated with high acceptance of counselling and uptake of NVP. It was however identified that couple counselling was low.

The people with disabilities in Kenya had inadequate access to information and most of the services were not tailored to meet their needs despite them having the same HIV risks like other people.

ANC is the entry point to PMTCT. However there is late enrolment which reduces the benefit of initiation of PMTCT interventions. Community sensitization enhances community awareness.

Stigma and discrimination on HIV/AIDS has been a challenge to uptake of testing and uptake of interventions to prevent PMTCT. Women usually have fear of stigma even before they test. This comes from the health as well as the community.

Women are not empowered to make decisions on their own health. Only 40% of women in Kenya make their decisions for themselves while 60% depend on men to decide for them. The men have to be made aware of health issues and the create awareness to the community in order to reduce stigma and discrimination.

Research has shown that exclusive breastfeeding is more feasible and beneficial to the infant in low income countries and has reduced risk of HIV infection. However, infant feeding is faced with a lot of challenges starting from the health workers who are not confident to advice mothers due to limited knowledge. Some put their own values and the mother is not able to make decision that will help her cope with her situation in the community. Other challenges are cultural norms and believe which affects the women especially those who have not disclosed their HIV status. Mixed feeding was found to be low in Nairobi and therefore the risk of transmission is not high.

Male involvement was found to be low in Nairobi and other countries like Tanzania and Zimbabwe. However, where men were involved, there was high uptake of PMTCT interventions, low stigma, high number of disclosure and low domestic violence. Lack of male involvements leads to low HIV testing for and low uptake of PMTCT. Some of the reasons for men not getting involved was lack of information, fear of HIV results and that the services are more feminine than inclusive. However, there are no guidelines to guide health workers on male involvement.

Community involvement is important. The implemented mother2mother programme in South Africa has increased uptake of PMTCT and the programme is ongoing in Kenya. In Zimbabwe, community mobilization strengthened quality of care in ANC and during labour. Peer educators and existing community organizations were used to educate the community on PMTCT.

Unmet reproductive health needs contributed to unwanted pregnancies in HIV positive women. Integration of family planning with HIV services was associated with increased uptake of family planning services. The Government has started the process of integration but there is lack of funds to support the integration. Erratic supply of commodities and parallel coordination were identified as barriers to access and utilization of PMTCT services.

Shortage of staff has been another challenge hindering effective service delivery in Nairobi. As many upcoming programmes are implemented, there are no additional staffs recruited. This has continually overworked the existing staff while pregnant women go home unattended. This leading to poor quality of service delivery and missed opportunities. Other countries like South Africa, Ethiopia and Malawi have resolved this by task shifting. In PMTCT services, Cameroon has trained TBAs on HIV testing and on NVP administration. Similarly trained peer counsellors have been trained to provide PMTCT services in Zimbabwe. This has enabled the health workers to maximize their potential. In Kenya, non-medical staffs are trained in VCT unlike PMTCT which has to be done by medical staff. Nairobi lacks proper infrastructures for the already overstretched services. There are no new buildings to accommodate the services which are integrated in small structures. This compromises privacy and confidentiality and may affect the PMTCT services delivery. Pregnant women like others would like their privacy and confidentiality observed.

Shortage of supplies and equipment was identified in the studies. Supply of HIV testing kits is not consistent and this affects service delivery when pregnant mothers go untested. Shortage of NVP and erratic supply creates missed opportunity for PMTCT intervention.

However, the Government relies 90% on donor funding for HIV/AIDS programme and this raises a question of sustainability.

CHAPTER 7: RECOMENDATIONS AND CONCLUSION

1. Strengthen human resource and adopting innovative strategies like training of TBAs and CHWs and on PMTCT and facilitating them to reach people at the community level. Linkage between the health facilities and the community will facilitate education and interventions of PMTCT both in the health facilities and at the community level.
2. Facilitate evaluation of mother2mother programme in Kenya and identify its progress which may provide additional support of HIV positive mothers and their babies through home based care and provide continuous counselling on infant feeding.
3. Male involvement to be undertaken through addressing community beliefs and norms that limits male involvement. Strengthen community participation through community information, education and communication.
4. Create a supportive environment by strengthening of health care systems to be able to offer comprehensive PMTCT services through consistent supplies of logistics. Training of staff on PMTCT and change of negative attitude towards HIV clients and skills to enhance male involvement in reproductive health care.
5. Improve integration of other services i.e. family planning in PMTCT to access and meet the reproductive health needs and rights of people living with HIV.
6. Develop strategies which will improve access and utilization of PMTCT services of people with special needs like people with disabilities and the adolescents.
8. Access to primary health care and integration of services to offer a range of comprehensive interventions should be addressed especially in the slums.
10. Further research needed on the above needs and feasibility of the recommendations.

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