

# Utilization of Prevention of HIV Transmission from Mother to Child Services in Kenya's Pastoralist Communities of Northern Kenya

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## Abstract

*In many world economies including Kenya, HIV/AIDS is considered as one of the leading cause of deaths. The pandemic is associated with various negative effects including reduction in life expectancy, sluggish economic growth, and deepening of household poverty. In the country, studies reveal continued increase in the number of the HIV infected infants being born despite the concerted efforts by the government in collaboration with other stakeholders to contain MTCT. The purpose of this study was to assess the factors contributing to low utilization of PMTCT services in Kenya's pastoralist communities by using both primary and secondary data. Data collected was coded, formatted and analyzed using descriptive statistics. Notable findings include low levels of assisted hospital deliveries by a trained health care worker, and low usage of family planning services. Various factors were found to account towards utilization of PMTCT services amongst the pastoralist communities. These included geographical access to health, lack of Knowledge on PMTCT services, availability of quality PMTCT services and information during ante natal and post natal visits, and past experience among other factors. The study also established that uptake of individual PMTCT components were high for HIV counseling and testing but lower for maternal and infant prophylaxis components. Key recommendations made based on the findings include reducing geographical access by for instance introducing mobile clinics; sustained improvement in the provision of health education at both community and service delivery points. Other recommendations included enhanced couple counseling and testing as well as the strengthening the quality of PMTCT services provided at facility level while ensuring provision of minimum package of PMTCT services during the ANC and post natal visits.*

**Keywords:** Utilization, ante and post natal, Geographical Access, Pastoralist Communities

## 1.0 Introduction

### 1.1 Background and Context

HIV/AIDS pandemic is a worldwide problem featuring prominently at global, regional national, society and household levels. The management of the pandemic continues to merit attention at all institution including government, donors, civil society, private sector and family. It also constitute the most urgent tasks facing humanity today and the biggest challenge that no country either developed or developing has been able to overcome. The pandemic is associated with various negative effects including reduction in life expectancy, sluggish economic growth, and household catastrophic health expenditures. It is estimated that every day, nearly 7,000 persons became infected with HIV while nearly 5,000 persons die from HIV/AIDS and other related diseases partly attributed to inadequate access to HIV prevention, care and treatment globally (UNAIDS, 2012). In 2011, about 17.3 million children were estimated to have lost one or both parents to AIDS while millions were affected in terms of poverty, homelessness, school dropout, discrimination and loss of life opportunities. While the percentage of people living with HIV has stabilized since 2000, the overall number of people living with HIV has steadily increased as new infections occur each year, prolonged lives due to Anti-Retro-viral (ARVs) drugs and as new infections continue to outnumber AIDs deaths (UNAIDS, 2008).

In 2003, UNICEF reported more than 11 million African children under the age of 15 years as orphaned by the pandemic. In the report, it was projected that by 2010 there will be about 20 million children in SSA who will have lost at least one parent to AIDS, bringing the total number of orphans to 42 million. In the worst affected countries of Southern Africa (Botswana, Lesotho, Swaziland and Zimbabwe) more than one in five children will be orphans by 2010.

The situation is worsening every day and as put by UN Special Envoy for HIV/AIDs in Africa (January 2004) in most countries in Sub-Saharan Africa “grandparents bury their children and sometimes their grandchildren before they themselves are buried”. Experts contend that while average prevalence may be levelling off in the region, the worst of mortality and its social and economic consequences are yet to come. In other countries, the epidemic among the vulnerable groups is growing at an alarming rate (for example Russia, India, China and South East Asia) while in Latin America and the Caribbean, the epidemic continues to evolve but seems relatively stable. Although some national governments are increasingly confronting the challenges of HIV/AIDS, a few others still continue to deny its significance or even its existence within its borders (UNICEF, 2003).

Sub Saharan Africa (SSA) accounts to 67% of all people living with HIV and for 75% deaths in 2007. An estimated 1.9 million people were newly infected with HIV in 2007, bringing to 22 million people living with HIV. In this region, the epidemic has orphaned nearly 12 million children aged less than 18 years. The natural age in distribution in many national populations has been dramatically skewed by HIV, with potential perilous consequences for the transfer of knowledge and values form one generation to the next (2). Women account for half of all people living with HIV worldwide and nearly 60% of HIV infections in sub-Saharan Africa. An estimated 370,000 children younger than 15 years become infected with HIV in 2007 with almost 90% living SSA. Studies show that 90% of children living with HIV acquired the virus either during pregnancy, birth and breastfeeding. It is further estimated that 270,000 HIV infected children younger than 15 years died because of the pandemic. In countries with very high HIV prevalence, HIV is the underlying reason for more than one third of all deaths among children under the age of five (Mason, 2006; Hargreaves *et al.*, 2008).

In Kenya, the burden of HIV/AIDS continues to increase and requires urgent and well-targeted multisectoral approach. According to the 2003 National HIV surveillance report, HIV prevalence among adults aged 15-49 years stood at 9.4% translating into 1.7 million people. Similarly, the 2003 Kenya Demographic and health Survey (KDHS) reported a national prevalence of 6.7% translating to 1.2 million people. The prevalence levels reported in the two reports clearly show that the probability of many more Kenyans getting infected unless something is urgently done. HIV/AIDS affects various population groups in various ways. On one hand, adults aged 20-49 years who represent the economically active population continue to be infected. The KDHS of 2003 indicated that rural areas have half the HIV prevalence of urban areas. Children under 5 years include nearly 100,000 cases resulting from mother-to-child HIV transmission (MTCT), and between 30%-40% of all infants delivered by infected mothers become infected. As a result, the impact of HIV/AIDS continues to be felt in many sectors in the economy. For instance, in many of the country’s general hospitals, HIV/AIDS patients occupy half of hospital beds available. In the education sector, teachers are dying faster than they can be replaced, while students continue to drop out of school to either care for the sick or surviving young siblings as well as the dying parents. The business sector is not spared either as statistics show that the private sector absorbs an average of HIV/AIDS costs per employee of approximately US\$120, representing about 8% of company profits. It was estimated that the average firm in Kenya will be experiencing a total annual HIV/AIDS costs in excess of US\$403000 by the end of 2005 (Kenya National HIV/AIDS Strategy Plan 2000- 2005).

Furthermore, it was estimated that three people die of AIDS every five minutes and 200,000 urgently need antiretroviral drugs but only 12,000 can afford. As a result the disease is costing Kenya more than Ksh.200 million daily (KDHS 2003). Currently, about 80% of the expenditure for HIV and AIDS in Kenya comes from international sources. Although the HIV response in the country has recorded increasing financial resources from development partners future funding for the AIDS response is increasingly uncertain as a result of changing donor priorities and continuing global financial and economic troubles. Most notably, the Clinton HIV/AIDS Initiative (CHAI) has said it will discontinue support for pediatric ARVs and second-line treatment in 2011; PEPFAR has capped the number of patients it will support to 190,000 patients for next couple of years; and MSF has been transferring its facilities and patients to the government in its phase-out plan. The implication of these developments will be an increasing financing gap. It is therefore particularly worrying that some donors have recently indicated that they want to stabilise, and subsequently decrease, their contributions to the AIDS Response (Okech and Mukuusi, 2012).

## **1.2 HIV/AIDS in Kenya**

Kenya has the third largest population of people living with HIV in sub-Saharan Africa and the highest national HIV prevalence of any country outside Southern Africa (UNAIDS, 2008).

As people living with HIV are living longer as a result of improved access to HIV treatment, it is anticipated that the total number of HIV-infected individuals in Kenya will continue to increase, approaching 1.8 million by 2015. In the 2010 report by KNBS, a considerable geographic variability in the burden of HIV in Kenya was reported. In the report, provincial HIV prevalence was reported to range from a high of 13.9% in Nyanza Province to a low of 0.9% in North Eastern Province. Nyanza Province alone was reported to account for one in four HIV-infected persons in Kenya. Further, it was reported that the epidemic disproportionately affects women, who were estimated to account for about 59% of adults living with HIV with HIV prevalence among women within the reproductive age estimated at eight percent (KNBS, 2010).

In terms of settlement, HIV prevalence in urban and rural settings has converged, with HIV prevalence in urban areas only modestly higher than prevalence in rural settings. The disease seems not to discriminate on the basis of socioeconomic strata. Available statistics show that the highest HIV prevalence of 7.2% is among the top wealth quintile, with the second highest HIV prevalence among the second lowest at 6.8%. Although the pace of new HIV infections has slowed in Kenya, the number of new infections remains high. Based on current trends, it is projected that the number of new HIV infections will continue its slow, steady decline, with 81,972 new infections among people over age 15 anticipated in 2013. In addition to the approximately 91,000 new infections among adults, it is estimated that 12,894 children under age 15 became newly infected with HIV in 2011, with the overwhelming majority contracting the virus during pregnancy or delivery or as a result of breastfeeding (NAS COP, 2011).

The epidemic continues to exert a disproportionate effect on adolescents and young adults. Young people between ages 15–35 represent 38% of the national population but are estimated to constitute more than 60% of new HIV infections (NACC, 2009). The epidemic has resulted in a sharp deterioration of basic health indicators. Between 1998 and 2003 – or roughly between the epidemic’s peak in Kenya and the early introduction of anti-retroviral therapy – the adult mortality rate (ages 15–49) rose by 40% for women and by 30% among men. With a large number of newborns newly infected each year, the epidemic has also increased mortality among children under five (Gelmon *et al.*, 2009). Additionally, 0.9 percent of children (from 18 months to 14 years), or about 100,000 children, were HIV-positive.

The latest estimates by NACC (2014) show that HIV incidence has come down steeply from the peak attained in the mid-1990s (at 340,000 new HIV infections (ages 15+), equivalent to 2.7 of the adult population). From 2002–11, HIV incidence has remained broadly constant, at just over 0.4 percent. However, as the population of Kenya is growing rapidly, the absolute number of HIV infections has increased over this period. The report however shows that HIV incidence among children peaked later than for adults, and declined more slowly, as mother-to-child-transmission is in the first place tied to HIV prevalence among women (NACC, 2014).

### 1.3 Effects of the Pandemic

In the recent years, the death rate from AIDS was estimated at 150,000 per year (NACSOP, 2005). In this report, it was noted that AIDS has lowered life expectancy, deepened poverty in the country, reduced economic growth, exacerbated hunger, and worsened basic health indicators (NACC, 2011, UNPD, 2013). The epidemic is also considered the main cause of a sharp deterioration of basic health indicators, especially in the period between 1998 and 2003, when the epidemic was at its peak. In 2009, an estimated 1.2 million children in Kenya had lost one or both parents to AIDS. Economically, a child with one or more HIV-infected parents is significantly less likely than other children to be in school, more likely to be underweight, and less likely to receive basic medical care (Mishra *et al.*, 2005; Okech and Mukuusi, 2012).

The HIV and AIDS pandemic is now a global crisis and constitutes one of the most formidable challenges to development and social progress. It is eroding decades of development gains, undermining economies, threatening security and destabilizing societies. HIV/AIDS profoundly disrupts the economic and social bases of families. It mainly affects people in their prime years of life, the hardest hit being those in the productive ages of between 15 and 60 years. The death of parents has left 1.5 million children as orphans under the care of grandparents/guardians who may not have the capacity and skills to look after them well. It is also affecting the fundamental capacities and rights of staff at the workplace, particularly with respect to discrimination, stigmatization and care and support of those living with and affected by HIV and AIDS. This has also led to high dependency a rate which aggravates problems associated with the already widespread poverty.

Illnesses and deaths associated with HIV and AIDS has enormously impacted negatively on the Ministry's service delivery. Budgetary resources allocated for the provision of medical services are hardly enough to cater for the increasing cases requiring care and support of those infected and affected. Kenya also suffered economically as HIV/AIDS reduced productivity of labor as skilled personnel died of AIDS related complications. There was also an increase in poverty levels caused by death of breadwinners at the individual family household. The high mortality and morbidity due to HIV/AIDS increased the cost of providing medical care with health facilities being over-stretched due to many AIDS patients who were being catered for.

The concentration of the epidemic's burden among young adults has visited particular hardships on Kenya's children, regardless of whether children themselves become HIV-positive (Kyobutungi *et al.*, 2009). In 2011, an estimated 1.1 million children in Kenya had lost one or both parents to AIDS. Kenyan children with one or more HIV-infected parents are significantly less likely than other children to be in school, more likely to be underweight, and less likely to receive basic medical care (UNAIDS 2011). While children have experienced among the harshest effects of the epidemic, AIDS has burdened Kenyans from all age strata and all walks of life. Nearly one in five (18%) Nairobi residents over age 50 report having been personally affected by AIDS, such as becoming infected, caring for an AIDS patients or orphaned child, or losing a loved one (NACC, 2009). AIDS appears to have affected fertility patterns. On average, HIV-infected women have 40% fewer children than the norm. HIV-infected women are notably less likely to express a desire for a child within the next two years than women who had tested HIV-negative or who had not received HIV test results; women living with HIV are also significantly more likely than other women to report not desiring to have a child at any point in the future (NACC, 2009). HIV/AIDS is also associated with chronic illness and death, contributor to food insecurity in rural households, loss of productive family members and productive labour force, sell of assets. Others include heavy debt burden at household level, reduced savings, and an increase in the number of orphaned children (Muyanga *et al.*, 2013; Ndirangu *et al.*, 2013; Wafula *et al.*, 2013).

#### **1.4 PMTCT Initiatives in Kenya**

In Kenya, there is a 30-40% chance that a HIV positive, breastfeeding mother will pass HIV to her child in the absence of anti-retro viral therapy (ART), planned cesarean sections (CS), the means to safely formula feed, and access to quality medical services (NACC, 2009). A lot of system strengthening and advocacy initiatives have been put into place over the years so as to eliminate HIV transmission from mother to child. These have been aimed in addressing the prongs of PMTCT. These include primary prevention of HIV infection among women of child bearing age, prevention of unintended pregnancies among women living with HIV, prevention of HIV transmission from a woman living with HIV to her infant using ARVs and provision of appropriate treatment, care and support to mothers living with HIV and their children and families (NACC, 2009).

Important gains have been made in preventing new HIV infections. Kenya has one of the world's highest coverage rates for services to prevent mother-to-child HIV transmission, with 69% of HIV-positive pregnant women receiving anti-retro viral prophylaxis in 2011. As a result of scaled-up prevention services, the proportion of HIV-exposed infants who contract HIV declined from 27% in 2007 to 14.9% in 2011. This is however below the national target of reducing HIV transmission from mother to child to less than 5% by 2015 (UNICEF, 2012). With an estimated population of 38.6 million in the year 2010, the number of HI- exposed infants is estimated at 97, 272 with at least 38,900 HIV+ babies born assuming a 40% transmission without any intervention. Despite numerous efforts made to address the barriers in the four prong areas of PMTCT, HIV exposed infants continue to be infected (NASCO, 2011).

Studies reveal continued increase in the number of the HIV infected infants being born despite the interventions. For instance, amongst the pastoralist communities of the northern Kenya, slightly more than half of pregnant women seeking antenatal care, an estimated 2,784 were HIV positive. This means that the number is large if all expectant women seek ante natal care in health facilities. Approximately 8% of the infected women received PMTCT prophylaxis, 4 per cent delivered in health facilities while less than a tenth of infants born to HIV+ women received infant prophylaxis. Studies also show that less than a third of the pregnant women made at least the pre-requisite ante natal visit to the health facilities. Without interventions, the risk of MTCT of HIV is expected to sky rocket with breastfeeding accounting for about 10-20%. With interventions, including exclusive breastfeeding, it is estimated that the risk can be brought down to less than 2%. The government in collaboration with key development partners has continued to strengthen the health systems as part of the initiatives to reduce MTCT.

This has led to increase in the number of ART sites as well as the number of sites providing PMTCT services. For instance as the end of 2011, the number of PMTCT sites in the region had increased by almost 40%, while the number of EID sites increasing proportionately with PMTCT sites. Health care workers have also been trained in the quality provision of PMTCT services.

NASCOP estimates that there were 1.55 million babies born in 2011 and that as many as 6.3% pregnant women are living with HIV/Aids. With an estimated population of 38.6 million in the year 2010, the number of HIV Exposed infants is estimated to be 97,272 and at least 38,900 HIV infected infants are born, assuming a 40% transmission without any intervention (NASCOP, 2012). Virtual elimination of HIV transmission from mother to child has been realized in certain earmarked eMTCT zones in Nyanza and Rift Valley province. Most of the other counties have overtime shown consistent efforts in implementing PMTCT services which has led to decline in the number of HIV infected infants being born (NACC, 2012; UNICEF, 2012).

Despite the high testing coverage's at the anti natal clinics in the region, the proportion of women who completed the pre-requisite four ANC visits remains quite low with pastoralist communities equally affected (5). NASCOP reports show that only a few of the deliveries occurred within the health care settings with an insignificant number of women being on maternal prophylaxis. Similarly very few children testing HIV+ were on infant prophylaxis. These statistics do not support the expected outcome given the various efforts by the government in collaboration with other stakeholders in their effort towards scaling up PMTCT and EID sites in the country in general and the region under consideration. Similarly, the stakeholders continue to enhance trainings aimed earmarked to the health care providers as a bold step towards enhancing quality of PMTCT services. Further, community mobilization has been a continuous process by the existing community units (NASCOP, 2011) again directed towards enhancing PMTCT. Notwithstanding this, PMTCT services utilization still remains low in the country and there nomadic communities are not exceptional. Against this background, the synthesis aimed at examining factors contributing to the low levels of utilization of PMTCT services in Kenya despite the concerted efforts by key stakeholders.

## ***2.0 Methodology***

The study utilized the cross-sectional survey research design. This is a research method that looks at variables at a particular point in time. In the study, the women selected were enabled to fill out the questionnaire at a single meeting. The well-structured questionnaire had both open ended and close ended questions. The total duration of the study took 3 months since being a nomadic population, not all the study participants were available at the same time. Hence the three month period allowed for most of them to have an opportunity to participate once in the study. The design allowed for comparison of characteristics of mothers utilizing PMTCT services and those who fail to utilize PMTCT based on PMTCT utilization data that was ascertained simultaneously with the participants' characteristics. The cross-sectional design was appropriate because this study did not have any etiological objectives and inferences about factors associated with PMTCT utilization could be made without reference to the causes of PMTCT utilization. The total target population constituted HIV infected mothers seeking both ante natal and post natal care in health facilities. In collecting primary data, the study used both structured and open questions prepared by the researcher. Secondary data was based on published and unpublished sources from the government of Kenya and multilateral partners.

## ***3.0 Findings and Discussions***

There was evidence that distance to the health facility significantly impacted on PMTCT uptake. For instance, mothers who take the complete PMTCT package were those who on average were closer to health facilities compared to those who were slightly far from a health facility. This finding is an evident that geographical access to health facilities plays a significant role in the uptake PMTCT services. In the northern part of the country facilities are skewed towards urban centres thereby contributing towards geographical access problem which impacts negatively on the households' ability to access the much needed health care services including the ante natal and post natal care. The uptake of PMTCT showed a statistically significant association with distance from facility. Patients who did not take up PMTCT were on average 3.1 km away from the nearest facility compared to an average distance of 1.8 km for patients who reported PMTCT uptake with p-value of 0.048. Considering that many of these households are pastoralists, they would rather spent their time searching for basic needs especially food and water for domestic and livestock rather that visit health facilities. It is worth noting that in this region facilities are wide apart which has significant effect on access to the services required by the HIV+ mothers.

This finding confirms reports of missed opportunities for HIV testing related to the distance to nearest facility with on site HIV testing as reported by Larsson (2012). In view of this finding of an impact of distance on PMTCT uptake there are potential benefits of equipping lower level health facilities with on site HIV testing services compared to dependence on referral systems for HIV testing.

The study revealed that almost half of the mothers reported having received support in initiating breast feeding with health workers and relatives with mother in-laws singled out as the most important source of support in initiating the program. This was an interesting finding especially on the drivers on the initiation of breast feeding. According to the respondents, the information received from the health workers and close relatives on proper positioning of breast feeding instilled confidence in them thereby acting as a motivator for continued breast feeding their infants until they were of right age. This could be translated to imply that the health care providers and the in-laws should be empowered so that they can consistently support the mothers to initiate breast feeding. The study also established that women who received support to initiate breast feeding, chances were higher for them to continue breastfeeding until almost two years.

Exclusive breast feeding is protective to the HIV exposed infant as long as the baby has been put on prophylaxis as well as the mother. This is because from a nutrition perspective breast milk is safe and nutritious. Notwithstanding this, the study shows that maternal and infant prophylaxis was however below the WHO recommended levels. According to WHO, all HIV+ women should be put on prophylaxis irrespective of CD4 range and that the expectant woman is supposed to be with infant prophylaxis at first contact and the should be administered to the seventy two hours after birth. This finding supports earlier findings by Guay who observed that in developing countries, measures to reduce transmission of HIV transmission include safer delivery practices, infant feeding counselling and support, and use of anti-retro viral (ARV) treatment or MTCT prophylaxis

In terms of information, the most cited primary source of HIV information by the respondents were maternal and child health (MCH) and ante natal visits. Although other sources of information such as media and family were also singled out with the former acknowledged to have the greatest impact to the mothers. The respondents noted that they had trust in the health care providers since they believed that they were able to maintain the confidentiality of the patient's health status. Respondents, however noted incidences of non-timely, incorrect and incomplete provision of information on PMTCT by the health care workers. Some respondents also noted cases of refusal by mother to take and also administer prophylaxis due to perception of side effects/stigma.

In the study it was established that a significant proportion of HIV positive mothers either initiated ANC visits late, while others did not attend ANC during the period of expectancy. This was considered as a barrier towards the process of initiating PMTCT care. In a WHO report of 2011, it was observed that increasing access to antenatal care may be an effective way to expand the coverage of HIV testing and counseling among pregnant women living with HIV (WHO, 2011). In terms of disclosure, although a large number of mothers indicated reporting their status to their sexual partners and or close relatives and friends, a significant number did not disclose. Disclosure is considered as one of the key pillars in enhancing adherence since it not only enables the mother to access timely treatment but also acts as an entry point for the partner to seek HIV test. Various factors were cited by respondents to account for non-disclosure. These included fear of rejection or discrimination by their families or the community and lack of understanding the need to disclose the status. Some narrated incidences where their friends who had been diagnosed to be HIV + were yet to come to terms with their HIV status an issue that also affected their willingness to disclose their status.

An insignificant percentage of the respondents on the other hand reported availability of family planning information at the community level during the antenatal clinic visits while a large majority reported non-availability of the services. Non-availability of these important services is not only a quality concern but also a concern with access and eventually uptake of PMTCT services. Given the poverty levels in the study area, this thus raises equity concerns which in the process may contribute towards catastrophic health expenditures to the households. Adequate family planning information needs to be readily available to the mothers and their spouses. All health facilities should be able to provide family planning. In terms of delivery, whereas half occurred in the hospital setting, the remaining occurred either at home. In an ideal situation, most if not all deliveries should occur at a health care setting so that the essential services like PMTCT are provided as prescribed. Similarly, emergencies are also managed well at a health care facility as opposed to the home environment.

Deliveries at home were attributed to various factors including poverty, long distances to the health facilities as well as cultural beliefs. In addition, some mothers cited quality services and bad experience at the health facilities and hence preferred to deliver in the comfort of their homes. While recent reports indicate general improvements in facility births in Kenya due to the recent policy pronouncement by the government of free deliveries, in the region deliveries among HIV positive mothers still occur at home, without the assistance of health workers. Such deliveries expose the infants to the risk of HIV transmission.

#### **4.0 Conclusion and Way Forward**

##### **4.1 Conclusion**

In many world economies including Kenya, HIV/AIDS is considered as one of the greatest health crises. The pandemic is associated with various negative effects including reduction in life expectancy, sluggish economic growth, decline in savings, increase in orphaned children as well as and deepening of household poverty. In Kenya, studies reveal continued increase in the number of the HIV infected infants being born despite the concerted efforts by the government in collaboration with sectoral partners in strengthening health system and advocacy initiatives over the years aimed at the elimination of HIV transmission from mother to child. In spite of significant efforts directed towards enhanced provision of prevention of mother-to-child HIV transmission services to women during pregnancy in the country as a whole, uptake of the services among women in the pastoralist community has continued to lag behind. Multiple barriers seem to account to the episode at both the household and health facility levels. These include long distance to health facilities, low uptake of maternal and infant prophylaxis; inability to follow the set guidelines; poor service delivery at the point of contact; inability to access the services primarily due to distance. Others were women perception of the services and their previous experience when the services were sought, home deliveries more so by un-skilled health workers. Poverty and cultural practices also contributed to low uptake of the services. Fear of discrimination as well as distances to the health facilities hinder the uptake of PMTCT services. Non-availability of family planning information at the community level was also found to impact negatively on the uptake of PMTCT services. Further, deliveries outside the health care setting equally affected uptake of PMTCT services negatively. These were partly attributed to long distances to health facilities as well as poor services received at the health facilities in the earlier visits.

##### **Way Forward**

Concerted efforts need to be put in place to enhance ANC attendance. This could be realized by strengthening community facility linkages so as to enable pregnant women to visit health facilities for ANC services. The health facilities' should also ensure that their services are of good quality while ensuring availability of the necessary prescriptions in the facilities. The waiting times should also be reduced by integrating Maternal and Child Health Clinics with ANC. The health care facilities should also ensure that the minimum package for PMTCT services is provided to the mother during anti natal visits. This includes HIV testing, screening for STI, partner testing, family planning, maternal prophylaxis, and infant prophylaxis with the final determination of the status of the infant at least one-half years. Community education to create awareness needs to be enhanced to enable the mothers to have adequate and timely information in relations to PMTCT services. Strategies should be put in place to enhance health facility deliveries by a trained health care worker while at the same time the capacity of the health workers at facilities need to be enhanced through refresher courses on current health technologies. The health care workers need to ensure that during anti natal and post natal visits, adequate relevant services critical in PMTCT are provided.

Mothers need to be counseled on safe infant young and child feeding options by use of demonstrations. After the birth, mothers need to be assisted to initiate breastfeeding through proper latching. In terms of distance, as a short term stop gap measure mobile clinics could be used however in the long term more facilities need to be constructed and equipment with the necessary resources including health equipment and machines, health personnel among others.

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