

Missed opportunities in the Prevention of the Mother to Child Transmission Programme in a sub-district of the North West Province, South Africa

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This study is dedicated to my parents, the late Armando Vasco and Modjadji Anna Sithole, who spent most of their lives as my role models, exercising patience and perseverance through life's challenges, and who remain my source of inspiration.

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ABSTRACT

According to global statistics more than half of all people living with HIV are women, the majority of whom live in sub-Saharan Africa. South Africa adapted the WHO guidelines on PMTCT to the local situation. In South Africa the prevalence of HIV amongst pregnant women attending public antenatal care is high, although new infections are declining.

Studies on missed opportunities in PMTCT have been conducted in other areas of South Africa, but none in the North West Province. Three health institutions deemed to have more patient attendance were chosen for the study from a particular sub-district.

The purpose of this study was to identify and describe the missed opportunities in the PMTCT programme in a sub-district of the North West Province, the results of which may assist in the improvement of PMTCT services.

A descriptive study design was used to identify and describe the missed opportunities in the PMTCT programme during pregnancy, labour and postnatal period. The sample consisted of 125 the records of pregnant women whose babies were born in January 2010. Entry to the health care facilities was gained through written permissions from the Department of Health and the facilities.

Missed opportunities identified were that 0.8% (1/125) of pregnant women whose records were audited, was not tested for HIV infections and 9.6% (12/125) had no information on testing. Of the 35 women who were found to be HIV positive, only 74.3% (26/35) had confirmatory test done while it was not done in 2.9% (1/35). Furthermore, only 57.1% (20/35) had their blood for CD4 cell count taken, for 2.9% (1/35) no blood was taken for CD4 cell count and there was no information for the remaining 40.0% (14/35). Only 2.9% (1/35) HIV positive pregnant women continued with HAART during labour, 62.9% (22/35) received ARVs for PMTCT and for 34.2% (12/35) there was no information recorded. Prophylaxis for prolonged rupture of membranes was not given in 5.7% (2/35) of these women during labour. There were no records of any TB screening for such women and infant feeding counselling were never carried out. Lack of recording was the major problem identified in this study.

[Key words: HIV and AIDS, Mother to Child Transmission, Prevention of the Mother To Child Transmission, Missed opportunities, Clinical auditing of records]

TABLE OF

CHAPTER 1: OVERVIEW OF THE STUDY	1
1.1 Introduction to the study	1
1.2 Background and rationale	1
1.3 Problem statement	4
1.4 Objective of the study	5
1.5 Paradigmatic assumptions	5
1.5.1 Meta-theoretical assumptions.....	5
1.5.2 Theoretical assumptions.....	6
1.6 Research design.....	10
1.7 Research methods	10
1.8 Rigour.....	14
1.9 Ethical considerations	14
1.10 Framework of the study	15
1.11 Conclusion.....	15
CHAPTER 2: LITERATURE STUDY: MISSED OPPORTUNITIES IN THE PMTCT PROGRAMME	16
2.1 Introduction.....	16
2.2 Significance of MTCT	16
2.3 Measures to address MTCT	17

2.3.1	International guidelines.....	17
2.3.2	South African PMTCT guidelines.....	21
2.4	Missed opportunities in PMTCT	27
2.5	Summary	29
CHAPTER 3: METHODS AND PROCEDURES		30
3.1	Introduction.....	30
3.2	Research design	30
3.3	Setting	31
3.4	Research methods and procedures.....	33
3.4.1.	Population and sample	33
3.4.2	Data collection	34
3.4.3	Data management and analysis	36
3.5	Validity and reliability.....	36
3.5.1	Internal validity.....	36
3.5.2	External validity	37
3.5.3	Reliability	37
3.6	Ethical considerations	37
3.6.1	The right to anonymity and confidentiality	38
3.7	Summary	39
CHAPTER 4: FINDINGS.....		40

4.1	Introduction.....	40
4.2	Reflection of data analysis	40
4.3.	Demographic characteristics	41
4.3.1	Age	41
4.3.2	Parity	42
4.3.3	Gravidity	42
4.3.4	Weeks of gestation at first antenatal visit	43
4.4	Missed opportunities regarding prevention of mother-to-child transmission of HIV	43
4.4.1	Missed opportunities according to the audited records of all the pregnant women (irrespective of HIV status)	43
4.4.2	Missed opportunities according to the audited records of the HIV positive pregnant women	46
4.4.3	Missed opportunities relating to the neonate	52
4.5	Summary of the findings.....	54
CHAPTER 5: DISCUSSION OF FINDINGS, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS		55
5.1	Introduction.....	55
5.2	Discussions of findings	55
5.2.1	Women not tested during pregnancy	55

5.2.2	Re-testing of HIV negative women at 34 weeks, confirmatory tests for those who tested HIV positive, CD4 cell count and TB screening of HIV positive pregnant women.....	57
5.2.3	HIV positive pregnant women who not receiving treatment during pregnancy or labour.....	58
5.2.4	Missed opportunities during the birth process	59
5.2.6	Counselling on infant feeding	60
5.2.7	PMTCT programme relating to the neonate	61
5.3	Conclusions	63
5.3.1	Conclusions on missed opportunities during pregnancy.....	63
5.3.2	Conclusions on missed opportunities during birth	64
5.3.3	Conclusions on missed opportunities related to the neonate	64
5.4	Limitations	65
5.5	Recommendations for nursing education, nursing research and midwifery practice	66
5.5.1	Recommendations for nursing education	66
5.5.2	Recommendations for nursing research.....	66
5.5.3	Recommendations for midwifery practice	67
5.6	Concluding remarks.....	68
	References.....	69

ANNEXURES.....	80
Annexure A North-West University (Potchefstroom Campus) Ethics Approval	80
Annexure B Request for permission North West Provincial Department of Health	81
Annexure C Request for Permission District Health Office.....	83
Annexure D Request for Permission UNIT 9 Clinic	85
Annexure E Request for Permission Montshioa Town Clinic	87
Annexure F Request for Permission Montshioa Stadt Clinic	89
Annexure G Permission from Department of Health	91
Annexure H Permission from institution A	92
Annexure I Permission from institution B.....	93
Annexure J Permission from institution C.....	94
Annexure K Clinical Audit Form	95

LIST OF TABLES

Table 1-1 Summary of methods and procedure.....	12
Table 4-1 total of HIV positive women at different stages.....	40
Table 4-2 Age distribution of patients whose case records were analysed.....	41
Table 4-3 Parity of patients whose case records were analysed.....	42
Table 4-4 Gravidity of patients whose case records were analysed.....	42
Table 4-5 weeks of gestation at first visit.....	43
Table 4-6 Missed opportunities on all women irrespective of their HIV status.....	44
Table 4-7 Missed opportunities during antenatal period for HIV positive pregnant women.....	47
Table 4-8 Missed opportunities with regard to PMTCT during the birth process.....	50
Table 4-9 Missed opportunities relating to the neonate.....	52

LIST OF FIGURES

Figure 2-1 Provider initiated counselling and testing.....	22
Figure 2-2 PMTCT algorithm- intrapartum management.....	25
Figure 3-1 Ngaka Modiri Molema district with its five sub-district.....	32

CHAPTER 1: OVERVIEW OF THE STUDY

1.1 Introduction to the study

Globally and in South Africa, the Acquired Immune Deficiency Syndrome (AIDS) epidemic is a major crisis, affecting the population at large, without discrimination between genders, sexual orientation, age or race. More women than men are living with the Human Immunodeficiency Virus (HIV), and young women, aged 15 – 24 years, are as much as eight times more likely to be HIV positive than men (UNAIDS, 2010). Infected women, in their childbearing years, are also able to transmit the infection to their unborn children throughout pregnancy, during labour and delivery and postpartum through breast milk (WHO, 2010:21).

This study focuses on the missed opportunities in the prevention of mother to child transmission (PMTCT) of HIV in a sub-district of the North West Province in South Africa.

1.2 Background and rationale

In the light of the high numbers and the consequences of the HIV and AIDS pandemic, it became essential to limit or to eradicate the mother to child transmission. According to the WHO (2011), there were an estimated 34 million (31.6 – 35.2 million) people living with HIV/AIDS globally in 2010; of these, 3.4 million children were estimated (globally) to be living with HIV/AIDS. AIDS deaths worldwide in 2011, were estimated to be 1.7 million (1.5 – 1.9 million) (WHO, 2011). In his address to the UN Assembly in June 2001, President Festus Mogae summed up the situation concerning the AIDS epidemic in his country, Botswana, by saying "We are threatened with extinction. People are dying in high numbers. It is a crisis of the first magnitude" (Avert, 2010a).

Sub-Saharan Africa bears an inordinate share of the global HIV burden (UNAIDS, 2010:10,25b). In South Africa, the prevalence of HIV amongst pregnant women who attended public health antenatal clinic services during pregnancy was 30.2% in 2010 (Avert, 2011) and according to the Health Systems Trust (Mureithi & Sherman,

2013:92)it has stabilised at 29% in 2012.In the North West Province specifically, the HIV prevalence amongst antenatal clinic attendees was estimated at 23.7% in 2010/2011, having declined from 30.0% in 2009 (Mureithi & Sherman, 2013:243). While the decline in HIV infections is a sign that the epidemic is showing signs of starting to reverse, the UNAIDS Executive Director, however, puts it this way: “....we are not yet in the position to say ‘mission accomplished’” (UNAIDS, 2010b).

The high numbers of women and children living with HIV/AIDS globally prompted UNAIDS to call for the virtual elimination of mother to child transmission of HIV by 2015 (UNAIDS, 2010b). Under the banner of ‘virtual elimination’ of maternal-to-child transmission (MTCT) of HIV and through the efforts undertaken by different countries infighting the transmission of the HI virus to unborn babies, the United Nations reports a decline in the perinatal and breastfeeding transmission of HIV from an estimated 500 000 children (320 000 – 670 000) in 2001 to 370 000 (220 000 – 520 000) in 2009 (UNAIDS, 2010b).The elimination of HIV became possible through the administration of antiretroviral therapy (ARVs) to pregnant women who were HIV positive and infants exposed to the HI virus.

According to Schuklenk and Kleinsmidt (2007), the use of the ACTG076regimen (antepartum and intrapartum Zidovudine for the mother and 6.weeks of treatment for the newborn) would result in HIV being averted in 1.1% to 1.5% of all newborns, as compared to 35%, if strategies are not in place to prevent mother to child transmission. The effectiveness of the PMTCT programme in South Africa was reported by Leach-Lemens (2011), that the transmission from mother to child of HIV infection was reduced to less than 4%. The reduction is attributed to the implementation of a comprehensive national programme to prevent transmission of HIV from mother to infant, through antenatal HIV testing and provision of antiretroviral prophylaxis or treatment for mothers and infants.

The South African National Department of Health, following the World Health Organization initiatives (WHO, 2007), has put PMTCT guidelines in place. Maternity units in the North West Province also participate in the programme by offering HIV

counselling and testing (HCT), and antiretroviral drugs (ARV) from the antenatal period, during the intrapartum period through to the postnatal period, including treatment for those babies born to HIV positive mothers.

The PMTCT programme entails the following:

- (1) Offering of information about PMTCT in the antenatal clinic
- (2) Offering of HIV counselling and testing (HCT)
- (3) HIV testing
- (4) Determining the CD4 cell count
- (5) ARV treatment during pregnancy and labour for the mother and the baby
- (6) Providing advice regarding infant feeding and care (DoH, 2010a).

From these strategies, one would expect that all HIV positive women and their babies would benefit from programmes preventing MTCT. However, there is evidence that the current HIV prevention campaigns are not having the desired impact, particularly among young women in South Africa (Rehle, Shisana, Pillay, Zuma, Puren & Parker 2007:194). One of the findings about missed opportunities in PMTCT in the study by Perez, Zvandaziva, Engelsman and Dabis (2006:514-520) revealed that some pregnant women go through pregnancy and labour without any information about HIV infection until and including after their discharged from the health care facilities.

Sub-optimal care during the intrapartum period may also be considered a missed opportunity to limit mother-to-child transmission. In a study undertaken by Du Preez, Du Plessis and Pienaar (2006:200), focusing on intrapartum practices to limit vertical transmission of HIV in the North West Province, it was found that episiotomies were performed on HIV positive women without indications being recorded, while antiretroviral therapy was not given to all HIV positive mothers nor to neonates born from HIV positive mothers. Other interventions which increase the risk of MTCT, such as the artificial rupturing of membranes and suctioning of the mucous membranes of the neonate directly after birth were also common. The same study also found that most of the actions of the midwives were not recorded in the patients' files and registers.

In a study conducted in Kwazulu-Natal, Buch, Thambo, Ferrinho, Kolsteren and Van Lerberghe (2003:29) found that relatively “small leakages” from care, at each step of the PMTCT process, added up to a significant cumulative number of missed opportunities. Eight comma eight percent(8,8%) of women were not offered HIV and AIDS counselling at their first antenatal visit, while eight comma three percent(8,3%) of these women were not offered HIV and AIDS counselling at their subsequent antenatal visit. Of the 22,8% of the women who tested positive, 91,1% received Nevirapine (the only antiretroviral medication prescribed for PMTCT at that time) and 90,2% of this group were given information about infant feeding while 9,8% were not. The authors concluded that there were women in their study sample of 374 who required Nevirapine, as per the PMTCT protocol, but did not receive it. It was found that 42 of the women did not receive Nevirapine and only 37 of the women did receive Nevirapine. This represents a significant cumulative number of missed opportunities.

Based on this background, the researcher became concerned about missed opportunities in the PMTCT of HIV in a specific sub-district of North-West Province as little is known about the missed opportunities in the PMTCT in this sub-district. This research was undertaken to be able to better understand where and when missed opportunities occur in this specific sub-district in anticipation that the findings would indicate whether such missed opportunities took place during pregnancy, during labour or with regard to the neonate. The results of this study will assist in improving PMTCT service delivery by providing information to the stakeholders, such as the Department of Health, on where the missed opportunities are.

1.3 Problem statement

There is a high prevalence (29,6%) of HIV infection amongst pregnant women attending public antenatal clinics in the North West Province and up to 30% of these mothers will transmit the virus to their unborn babies if intervention is not properly instituted (NDoH, 2011:8). Mother to child transmission is largely preventable provided that the PMTCT programme is followed, as stipulated in the guidelines laid down by the National Department of Health (NDoH, 2010a). However, as mentioned earlier, little is known

about the missed opportunities in the PMTCT programme in the sub-district of the North West Province. In view of the missed opportunities found in other areas in the health care facilities nationally and internationally, the following question arises:

- What are the missed opportunities in the PMTCT programme in a selected sub-district of the North West Province?

1.4 Objective of the study

The objective of this study was

- to identify and describe missed opportunities in the PMTCT programme in a selected sub-district of the North West Province in South Africa.

1.5 Paradigmatic assumptions

The meta-theoretical assumption and theoretical assumptions are discussed in this section.

1.5.1 Meta-theoretical assumptions

These are the researcher's beliefs concerning human beings, environment, health and illness. In this study, the researcher is basing her assumptions on a Judeo-Christian perspective to explicitly state her worldview, as it relates to this study.

- *1.5.1.1 Human beings*

Human beings are created by God in His image, with the command to subdue the earth and be accountable to Him as stated in Genesis 1:26, 27(Holy Bible, 2005). When people obey God and choose to be in a close relationship with Him, they will have a life-long process of regeneration within themselves. In this research, "human beings" refers to: pregnant women who are HIV positive, their unborn infants and the midwives providing care to them.

- 1.5.1.2 *Environment*

The environment includes the physical, social and spiritual aspect of the HIV positive pregnant women and in this study refers to the external environment of the pregnant woman that interacts with her (internal environment); this interaction is continuous and reciprocal.

- 1.5.1.3 *Health and Illness*

The assumption that this study makes with regard to health, is that it is a state of physical, mental and spiritual well-being. The health status of a human being is determined by his/her interaction with his/her external and internal environment. Both health and illness are states that reflect the person's interactive patterns with stressors in the internal and external environment.

An HIV positive woman might however, find herself in-between the two opposite poles of health and illness where she is initially inclined more towards the pole of health as she remains physically, mentally, spiritually and emotionally healthy and asymptomatic, but gradually moves towards the pole of illness, as she develops full-blown AIDS.

- 1.5.1.4 *Nursing*

The term “nursing” implies the activities/actions provided by the nurse to the patient and the community. In this study, the nursing action is the care provided to the HIV positive pregnant women during the antenatal, intrapartum and postnatal period to prevent mother to child transmission of HIV infection.

1.5.2 Theoretical assumptions

In this section, the central theoretical argument as well as the theoretical description of key terms (conceptual definitions), are provided.

- 1.5.2.1 *Central theoretical argument*

A better understanding of the nature and cause of missed opportunities in PMTCT, as well as the recommendations based on the findings, may contribute to improved service

delivery so that more pregnant women and their babies will benefit from the PMTCT programme.

- 1.5.2.2 *Conceptual definitions*

The following concepts are defined within the context of this study:

(1) HIV/AIDS

HIV is transmitted from an infected person to another through sexual intercourse; the transfer of infected blood through the blood stream and or by mother to child transmission through pregnancy (NDoH, 2004:3). The virus enters the body and invades the T4 helper cells, which are the immune system of the body, rendering them unable to defend or protect the person. As the infection progresses, the person develops opportunistic diseases and later, full-blown AIDS. In this research, the term “HIV positive” refers to a person who is tested and found to have antibodies to the HI-virus; indicating that the person is infected with HIV.

(2) Registered nurse and midwife

This term refers to a person who is registered as a nurse and midwife with the South African Nursing Council in terms of the Nursing Act, 2005 (Act No. 33 of 2005).

(3) Counselling and HIV testing

Counselling is a private interactive process characterised by a unique relationship between a specially trained person and a client. This is aimed at helping the client to explore possible solutions to his/her problems and develop the ability to cope with life. Confidentiality is a key word in counselling and as a result what transpired in the discussions will be kept as secret unless the individual concerned will want the results to be made known. Before HIV testing, an individual should receive face to face counselling which is called pre-testing counselling and is aimed at allowing the individual to make informed decision about whether to have an HIV test or not(KZNDoh,2001).

In this study, counselling refers to a registered midwife giving information to a pregnant woman about HIV and AIDS with the aim of enabling the client to cope with stress and take decisions relating to HIV/AIDS throughout pregnancy, delivery and during breastfeeding.

Post-test counselling includes giving the HIV test results to the woman when she is ready to receive the result.

(4) Mother to child transmission

This refers to the transmission of the HI-virus from an HIV-positive woman to her infant during pregnancy, delivery, or breastfeeding. The term is used because the immediate source of the infection is the mother, and does not imply blaming the mother (NDoH, 2010a:5).

(5) Prevention of Mother to Child Transmission

For the purposes of this study, PMTCT refers to taking precautionary measures, including the use of ARVs, to prevent the baby from becoming infected with HIV by an HIV positive mother, from pregnancy through to breastfeeding.

(6) Anti-retroviral therapy

Anti-retroviral therapy refers to the drugs administered to HIV positive women to restore and preserve their immunological functions, increase their CD4 cell count, reduce HIV-related complications, improve their quality of life, prolong survival of the patient and prevent mother to child transmission of HIV. In this study, ARV therapy means that HIV positive women are given anti-retroviral drugs for treatment and PMTCT purposes according to the latest guidelines of the NDoH (2010). These guidelines indicate that pregnant women with a CD4 cell count of less than 350 cells/mm³, should receive ARV's as prophylaxis against mother-to-child transmission, while those with a CD4 cell count of more than 350 cells/mm³, should receive ARVs as lifelong treatment.

(7) Missed opportunity

A missed opportunity refers to failure to take advantage of an opportunity that presented itself to an individual or group, or failure to make good use of such an opportunity or chance.

In this study “missed opportunities” mean failure to limit the risk of MTCT with regard to such matters as: health education on PMTCT, counselling, testing or retesting of a pregnant woman who tested HIV negative, taking blood for a CD4 cell count, screening for opportunistic diseases as well as ARV therapy during pregnancy, delivery or breastfeeding.

(8) Unbooked pregnant woman

Unbooked pregnant women refers to those pregnant women who never attended antenatal care for their present pregnancy but visits the maternity units only when they are in labour that is when they are experiencing labour pains.

(9) Clinical audit

Clinical audit refers to a quality improvement process that seeks to improve patient care and outcomes through a systematic review of care against explicit criteria and a review of changes. Aspects of the structure, process and outcome of care are selected and systematically evaluated against the said explicit criteria. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in the healthcare delivery.

In this study “clinical audit” refers to a systematic review of all the maternity patients’ records against the abovementioned explicit criteria comprising the checklist developed on the PMTCT programme. The outcome of care would be selected and evaluated systematically and the results would be communicated to relevant stakeholders.

1.6 Research design

To answer the research question, a typical descriptive research design, as described by Brink, Van der Walt and Van Rensburg (2006:104) was used. This design is merely intended to describe the phenomenon under study (Brink *et al.*, 2006:104) which comprises the missed opportunities in the PMTCT programme in the sub-district of the North West Province.

The rationale for using a typical descriptive study design was that the researcher aim to search for accurate information about the characteristics of a single sample or about the frequency of a phenomenon's occurrence (Brink *et al.*, 2006:104). A descriptive design may be used for the purpose of developing theory, identifying problems with current practice, justifying current practice, making a judgement, or determining what others in similar situations are doing (Burns & Grove, 2005:232). A typical descriptive design involves identification of a phenomenon of interest and of the variables within the phenomenon, development of conceptual and operational definitions of the variables and the description of the variables. This leads to an interpretation of the theoretical meaning of the findings and provides knowledge of the variables and the study population that may be used for future research in the area (Burns & Grove, 2005:232). In this context, the descriptive design was used to identify missed opportunities regarding current practice in the PMTCT programme.

The researcher collected and analysed data (a retrospective audit of patients' records) on missed opportunities in the PMTCT programme by using a checklist. The study was contextual in nature, focusing on one specific health sub-district in North West Province and is not meant to be generalised to other settings.

1.7 Research methods

Research methods refer to the techniques used by the researchers to gather and analyse data relevant to the research question (Polit, Beck & Hungler, and 2001:13). As indicated above, in this study a clinical audit of maternity records was retrospectively

done in order to identify missed opportunities in the PMTCT programme and the research methods are outlined in Table 1-1.

Table 1-1: Summary of the method and procedures

Objective	Population & Sampling	Data collection	Data analysis	Rigour
To identify and describe missed opportunities in PMTCT programme in a sub-district in the North West Province.	Population Maternity records from three health institutions selected in the selected health sub-district formed the study population. Sample A convenience sample was used in the study. Based on the average number of women who gave birth at these health institutions per month, one month's maternity records were considered as adequate to perform the statistical analysis. The maternity records of all the patients who delivered in the three	A checklist covering antenatal, delivery and postnatal as well as neonatal care was used. The checklist was based on the policy and guidelines for the implementation of the PMTCT programme. A pilot study was done first in order to validate the checklist.	Data analysis was performed through descriptive statistics under the guidance of a statistician. The researcher used the SPSS 21 program to analyse data.	Internal validity - Content validity of the checklist for the audit of the maternity records and the reliability of the research process were ensured by using the Policy and Guidelines for the implementation of the PMTCT programme (NDoH, 2010) as a foundation. The checklist was also presented to subject experts for review before the actual data collection. - External validity: this is a contextual study using a relatively small sample and therefore the findings of this component of the study are only to be generalised to the setting where the research was conducted. - Reliability was enhanced by conducting a pilot study

	health institutions over a period of one month comprised the sample. The total number of patients' records audited was 125 which is n=125.			to ensure the consistency of measures obtained in the pilot study and that of the actual data collection.
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1.8 Rigour

Rigour is the striving for excellence in research through the use of discipline, scrupulous adherence to detail and strict accuracy. The research process consists of specific steps that are developed meticulously and are logically linked together. In this study these steps were examined for errors and weaknesses in areas such as design, measurement, sampling and statistical analysis.

It is important to ensure internal content validity of the data-collection tool. The tool is based on the Policy and Guidelines for the implementation of the PMTCT programme (NDoH, 2008) that is central to this study. The instrument was also presented to subject experts for review before the actual data collection (Brink *et al.*, 2006:160). Reliability represents the consistency in the use of a particular instrument and is an indication of the extent of random error in the measurement (Burns & Grove, 2005:375). In this study reliability was enhanced by conducting a pilot study to ascertain whether the instrument used in the pilot study would be usable during the actual data collection.

1.9 Ethical considerations

Prior to data collection, approval of the study was obtained from the Research Committee of the School of Nursing Science and the Ethics Committee of the North West University, Potchefstroom campus (Annexure A). Thereafter the researcher obtained permission from the Department of Health of the North West Province to undertake the study at the research sites (See Annexure G) as well as from the managers of the relevant health care institutions (See Annexure H, I, J).

In seeking the information from the patients' case records, the researcher adhered to the prescripts of the Access to Information Act (2 of 2000) and also Section 10 and Section 14 of the Constitution (1996) stating that everyone has inherent dignity and the right to have their dignity respected and protected, and everyone has a right to privacy.

Informed consent was not relevant in this study as a retrospective record audit was done. Anonymity was ensured by not using health institutions or patient's real names,

but using codes. The code list as well as the raw data will be kept for a period of five years under lock and key at the School of Nursing Science of Potchefstroom campus of the North-West University.

1.10 Framework of the study

The study comprises five chapters. Chapter one provides an overview of the study including the background, paradigmatic assumptions and a brief discussion of the research design and methods. Chapter two furnishes a literature study on the PMTCT programme, including detailed information on what is known about missed opportunities in the said programme as well as indicating those gaps addressed in these studies. In Chapter three, the methods of the study are discussed, while Chapter four supplies the findings of the study and Chapter five provides discussion of findings, conclusions, limitations and recommendations based on the findings.

1.11 Conclusion

In this chapter, the issues addressed were: background and rationale for the study, problem statement, objectives, theoretical framework, the research design, research methods, ethical considerations and the framework of the study.

CHAPTER 2: LITERATURE STUDY:MISSED OPPORTUNITIES INTHE PMTCT PROGRAMME

2.1 Introduction

To provide a theoretical ground for the study a literature review was carried out. This chapter provides more information on the background of the study and the current status of knowledge on the topic, with specific reference to MTCT of HIV. It also provides information on measures to address the syndrome, international and South African guidelines as well as missed opportunities in PMTCT.

2.2 Significance of MTCT

An estimated 200 million women around the world become pregnant each year, of whom about 2.5 million are HIV positive (UNAIDS 2005:5). Slightly more than half of all people living with HIV are women and girls. Sub-Saharan Africa bears an inordinate share of the global HIV burden (UNAIDS, 2010:10,25b). More women than men in Sub-Saharan Africa are living with HIV while young women aged 15 - 24 years are as much as eight times more likely than men to be HIV positive (UNAIDS 2010:10). In Botswana twice as many young women as young men are living with HIV infection (Avert HIV and AIDS, 2011). The prevalence of HIV among pregnant women varies widely by geographic location. In South Africa, the prevalence of HIV amongst pregnant women who attended public health antenatal clinic services was 29.5% in 2011 (NDoH, 2011: iii).

In 2011, the HIV prevalence amongst antenatal women (15 – 49 years) in the North West Province was 30.2%, a figure higher than the 29.6% in 2010 (NDoH, 2011: 44). In the district of Ngaka Modiri Molema, where this study was undertaken, the prevalence of HIV among antenatal women was 24.9% in 2011 (NDoH, 2011:45).

MTCT of HIV is a serious public health problem and threatens previous gains made in reducing child mortality. The previous gains, *inter alia*, include progress made in preventing measles, polio, diphtheria and other childhood illnesses. It was estimated

that 430 000 children were newly infected with HIV in 2008, over 90% of them through MTCT. Without treatment, about half of these infected children will die before their second birthday. The risk of MTCT, without intervention, ranges from 20% to 45% but with specific interventions in the non-breastfeeding population, the risk of MTCT may be reduced to less than 2% and to 5% or less in breastfeeding populations (WHO, 2010b:21).

2.3 Measures to address MTCT

The high numbers of HIV positive pregnant women and the risk of MTCT prompted the World Health Organization (WHO) to set guidelines to help control and prevent the spread of HIV infections amongst women and children. In addition, the WHO also periodically revises the guidelines in order to reach the optimal prevention of MTCT and drastically reduce maternal and infant mortality.

2.3.1 International guidelines

In 2000, WHO first issued recommendations for the use of ARV drugs for PMTCT as well as recommendations related to infant feeding with regard to HIV (WHO, 2007:6). In 2002, WHO, the United Nations (UN), the United Nations Children's Fund (UNICEF), the Joint United Nations Programme on HIV/AIDS(UNAIDS) and the United Nations Population Fund (UNFPA), developed a comprehensive approach to PMTCT (WHO, 2007:7). This entailed the primary prevention of HIV infection among women, especially young women; the prevention of unintended pregnancies among HIV infected women; provision of specific interventions to reduce HIV transmission from HIV infected women to their infants and provision of treatment, care and support for HIV infected mothers, their infants and family (WHO, 2007:5). In 2004 the use of ARV drugs was revised with the adoption of simplified and standardised regimens (WHO, 2007:7). The WHO's objectives are to provide guidance and to assist national ministries in different countries in the selection, and the provision, of ART and ARV prophylaxis for women and their infants in the context of PMTCT, taking into account the needs and constraints on health systems in various settings (WHO, 2007: 6, 7). The woman's health should be

the overarching priority in an ARV treatment decision during pregnancy and highly effective ARV regimens for MTCT prevention should be used (WHO, 2007: 7).

One of the recommendations on PMTCT by WHO is, to provide HIV testing and counselling to all persons attending health care facilities as a standard component of medical care (WHO, 2007:4-9). Provider initiated HIV testing should be accompanied by HIV related prevention, treatment, care and support services (WHO, 2007:4-9). All pregnant women, except those with a confirmed infection, should be tested as early as possible in pregnancy, while testing should be repeated late in pregnancy for women found to be HIV negative with the first testing. For pregnant women who present themselves for the first time at health facilities at the time of labour, HIV testing and counselling is recommended as well as for women of unknown status in labour, or as soon as possible after delivery (WHO, 2007:4-9).

HIV testing and counselling in pregnancy, as recommended by the WHO, serves as a gateway to effective treatment and support to HIV positive pregnant women (2007:4-9). Early testing allows the women who are found to be HIV positive to benefit from health education and ARVs, so as to minimise the risk of MTCT, whereas women not infected by HIV, maybe supported to remain uninfected (Mephram *et al.*, 2011: 203). Mephram, Bland and Newell aligned themselves with the WHO guidelines on repeat testing at a later stage in pregnancy for those who had initially tested negative, in case of a later HIV positive result, in order for them to benefit from the ARVs and health education. Leach–Lemens and Tags (2010), in their study, found that some pregnant women who tested HIV negative early during antenatal care tested HIV positive with repeat testing. This finding emphasises the importance of repeat testing of HIV in pregnant women who have tested HIV negative, as recommended by WHO guidelines.

The abovementioned guidelines on the use of ARV drugs for treating pregnant women and preventing HIV infection in infants were updated in 2005 and 2006 to incorporate new evidence and were aligned with the global commitment to universal access (WHO, 2007: 6, 7). Updates of these WHO guidelines on PMTCT indicate that they are dynamic, as may be seen above and in the update of 2010, which recommends the

initiation of ARVs for all women who have a CD4 cell count of ≤ 350 cells/mm³, irrespective of their WHO clinical staging (WHO, 2010: 2).

The introduction of ARV drugs, as treatment and prophylaxis against MTCT, is yielding positive results in those countries that are providing treatment to people living with HIV (UNAIDS, 2010:8). Thorne *et al.* (2009: 40) found that by increasing coverage with antiretroviral prophylaxis, the initial MTCT rate more than halved. In a study conducted by Mahy *et al.* (WHO, 2010b: 48) in the 25 countries with the largest numbers of HIV-positive pregnant women, it was found that between 2000 and 2009 there was a 24% reduction in the estimated annual number of new child infections. These authors indicated that if these countries implemented the new WHO PMTCT recommendations between 2010 and 2015 and provided treatment to 90% of HIV positive pregnant women, 1 million new child infections could be averted by 2015. In her study on vertical transmission of HIV in the Sub-Saharan Africa, Hampanda (2013:1) predicted that PMTCT would reduce the risk of vertical transmission of HIV to less than 1%. She further argued that MTCT is preventable through this set of interventions, earlier referred to as PMTCT.

While there are positive benefits in implementing the recommendations from the WHO, there are also challenges. Some of the difficulties PMTCT programmes face, even where services are available, are: that pregnant women are not offered an HIV test even if they present themselves to the health care facilities; some women refuse to take an HIV test for various reasons; other pregnant women do not return for follow-up visits and others do not adhere to their ARV drug regimens (Avert, 2011: 29). In addition to the above challenges, Mephram *et al.* (2011:203) found that many women in low resourced parts of the world fail to benefit from HIV testing for a number of reasons, such as poverty and difficulty in accessing health care, late presentations to antenatal services and the stigma.

In Botswana, where the PMTCT programme reaches over 95% of all women and HIV exposed infants, the percentage of infants infected with HIV born to HIV positive mothers is less than 4%; a rate comparable with the USA and Western Europe

(Avert,2010). The PMTCT programme of Botswana does, however, still experience challenges in the full implementation of PMTCT, namely:

- shortage of staff, hence constraints on treatment scaling-up
- problems of language barriers stemming from the recruited foreigners helping to implement the programme
- reluctance of the people to come forward to be tested for fear of discrimination
- HIV related stigma and denial.

The key goal of an intervention by the WHO was to test all pregnant women as a routine part of Maternal Child Health care for identifying the maximum number of HIV positive women both for counselling and for entry into the PMTCT programmes(WHO, 2012b:69). The WHO technical consultation team was concerned with those barriers which interfere with the identification of HIV positive pregnant women, so that interventions to reduce vertical transmission from mother to child are able to be instituted. The identified barriers were:

- women did not access antenatal care or whose deliveries were unattended by health care professionals
- if women were not tested, they could not be identified as HIV positive and be offered any PMTCT interventions or other needed support
- lack of child follow up and ability to provide postpartum follow up interventions
- limited ability to initiate ART at primary care/antenatal level
- limited integration/coordination with ART programmes
- lack of male partner support and familial support(WHO, 2010b: 73).

Because of the challenges in the interventions to minimise the transmission of HIV infection from the infected pregnant mother to the exposed child, the United Nations General Assembly Special Session (UNGASS) set in place a framework of action in 2001. This framework was developed for national and international accountability in the struggle against the HIV/AIDS epidemic. With regard to countries who are participating decision makers with WHO, each was required to make a pledge to pursue a series of benchmark targets relating to prevention, care, support and treatment and impact alleviation as well as to those children orphaned and made vulnerable by HIV/AIDS, as

part of the comprehensive AIDS response (WHO, 2010b: 11). South Africa is one of the countries that pledged their commitment to fight against HIV/AIDS.

As previously discussed, the WHO continually updates the global programmes on the use of antiretroviral drugs for treating pregnant women and preventing HIV infection in infants. These are done in order to overcome the worldwide challenges being faced. In the 2012 programme update, the WHO proposed a third option which was a further development in the fight against HIV infection in the pregnant women called Option B+ which is a triple drug antiretroviral regime that is taken throughout pregnancy, delivery and breastfeeding and the woman continues with it for life regardless of the CD4 count or clinical staging (WHO, 2012).

Globally, scientists are working tirelessly in the quest for a solution to reduce MTCT of HIV infection. At a symposium held at the University of Kwazulu Natal (UNAIDS, 05 June 2013), a report on the AIDS breakthrough of a baby who was born from an HIV positive mother was discussed. The so-called “Mississippi baby” was born HIV positive but, with treatment, the baby was functionally cured (UNAIDS, 2013). The implication of this are significant in the treatment of babies born from HIV positive mothers in that it may be possible, that with proper treatment, HIV in infants may be reduced or functionally cured. Functionally cured suggests that after aggressive treatment with ARVs, the tests show no sign of re-active HIV that is detectable viral load.

The African Union, in its mission to build momentum to stop new HIV infections among children and keep their mothers alive, held an international conference on maternal, newborn and child health in Johannesburg, South Africa on the 2nd of August 2013. This conference addressed a number of issues including service delivery and quality of service, access to medicines, family planning and task shifting and looked specifically at the impact of HIV on women and children and how to ensure increased access to essential HIV services (UNAIDS, 2013).

2.3.2 South African PMTCT guidelines

As recommended by the World Health Organization (WHO, 2010b), the South African National Department of Health (NDoH), implemented the revised guidelines on

prevention of mother to child transmission of HIV (NDoH, 2010). PMTCT services are widely available in South Africa (NDoH, 2008). Maternity units in the North West Province in South Africa also use these national PMTCT guidelines when rendering services to pregnant women.

South Africa, like many other countries in the world, has committed itself to intensify its fight against HIV and AIDS. Clinical guidelines for PMTCT are improved and new policies are in place (WHO, 2010b:18). The clinical guidelines for PMTCT in South Africa (DoH, 2010) are outlined in the following algorithm (see Fig 2.1 and Fig 2.2). In Fig 2.1, the procedure to be followed with regard to counselling and testing is outlined.

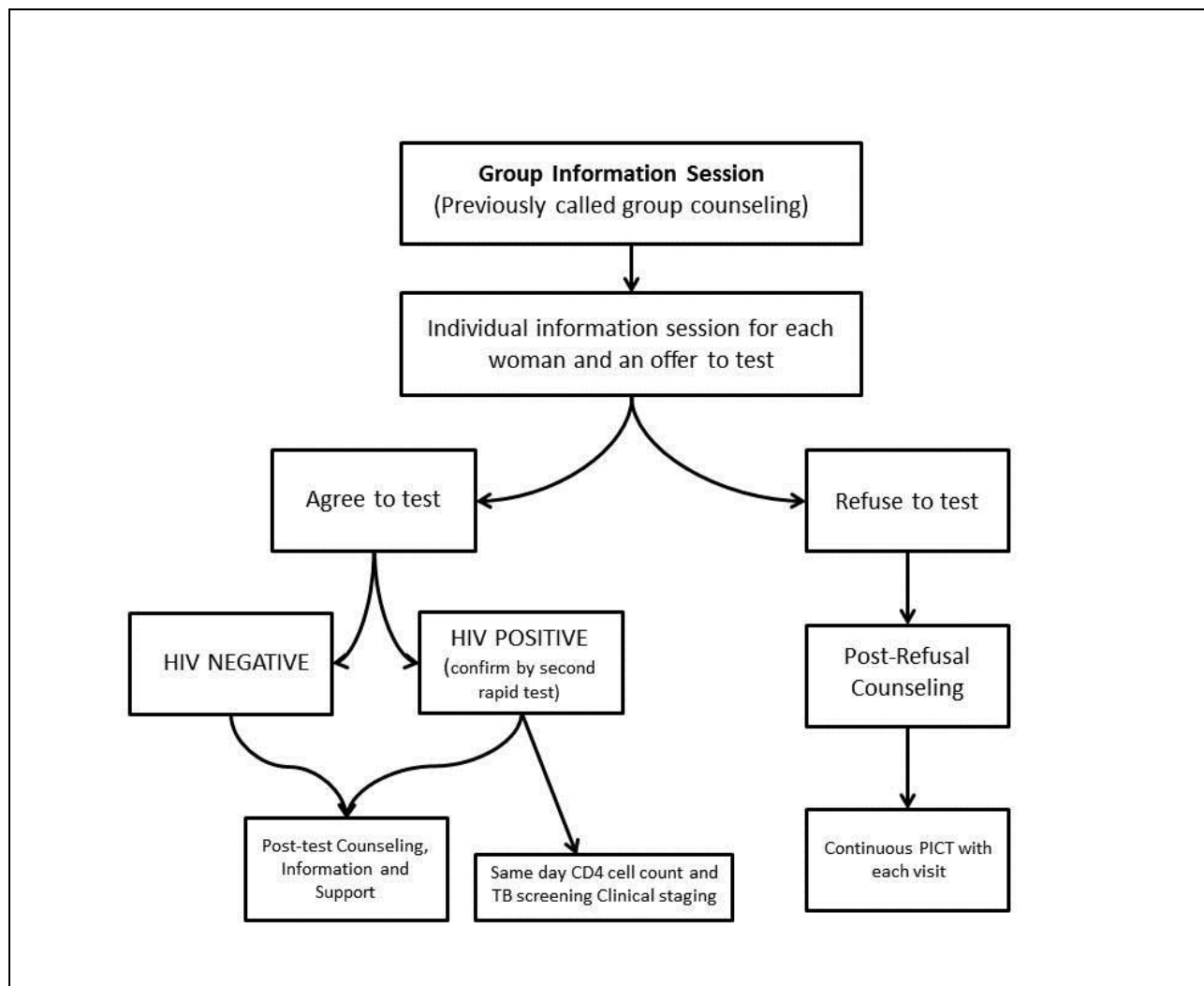


Figure 2-1: Provider initiated counselling and testing (NDoH, 2010: 17)

The health care provider should give routine information about HIV testing and PMTCT to all pregnant women attending antenatal care (both first time attendees and women attending follow-up visits) (NDoH, 2010: 16):

- The health care provider gives the initial information on HIV and its transmission in a “Group Information Session”. This is done to give the patient overall knowledge about HIV
- At the individual information session, all women who have not previously been tested, or those who require repeat testing meet with a counsellor, nurse or midwife for a one-on-one individual session.
- During the individual information session, the woman is informed of the routine HIV testing procedure, she is given an opportunity to ask questions and she should offer her verbal consent before she is tested. She is also informed that she may refuse an HIV test (an “opt out”).
- If she agrees to test and the results are negative, she is offered post-test counselling, information and support. For women who opt out of HIV testing, post-refusal counselling is given and HIV testing offered at every subsequent clinic visit
- Positive HIV tests should be confirmed by a second rapid HIV test followed by post-test counselling, information and support
- Determining the CD4 cell count and TB screening and the WHO clinical staging (which is the classification of the HIV disease on the basis of clinical manifestations that can be recognised and treated by clinicians in diverse setting) should be done on all women who are HIV positive. They must receive a date for a follow-up appointment for one week after the CD4 cell count has been done to ensure prompt initiation of lifelong ART if eligible
- Women with a CD4 cell count of 350 cells/mm^3 or less should receive lifelong antiretroviral treatment, both for their own health and to reduce MTCT, while women whose test results were positive but whose CD4 cell count was more than 350 cells/mm^3 , should be started on PMTCT prophylaxis (Zidovudine (AZT)).
- Women who initially tested negative and subsequently test positive should also be tested for their CD4 cell count, clinically staged and initiated on Zidovudine (AZT) whilst waiting for the CD4 cell count results

- There should be provision for other appropriate treatment, such as for opportunistic infection management and nutritional support

All pregnant women should be counselled on safe infant feeding (NDoH, 2010: 17).

With regard to intra-partum management the following guidelines are provided (NDoH, 2010: 27):

- Unbooked women and those, whose HIV status is unknown, first reporting during the first stage of labour, should be counselled and tested and offered PMTCT interventions as per guidelines. If this is not possible, counselling and testing should be offered after delivery.
- Women who are on lifelong antiretroviral therapy (ART) should continue with their relevant highly active antiretroviral therapy (HAART) regimen during labour.

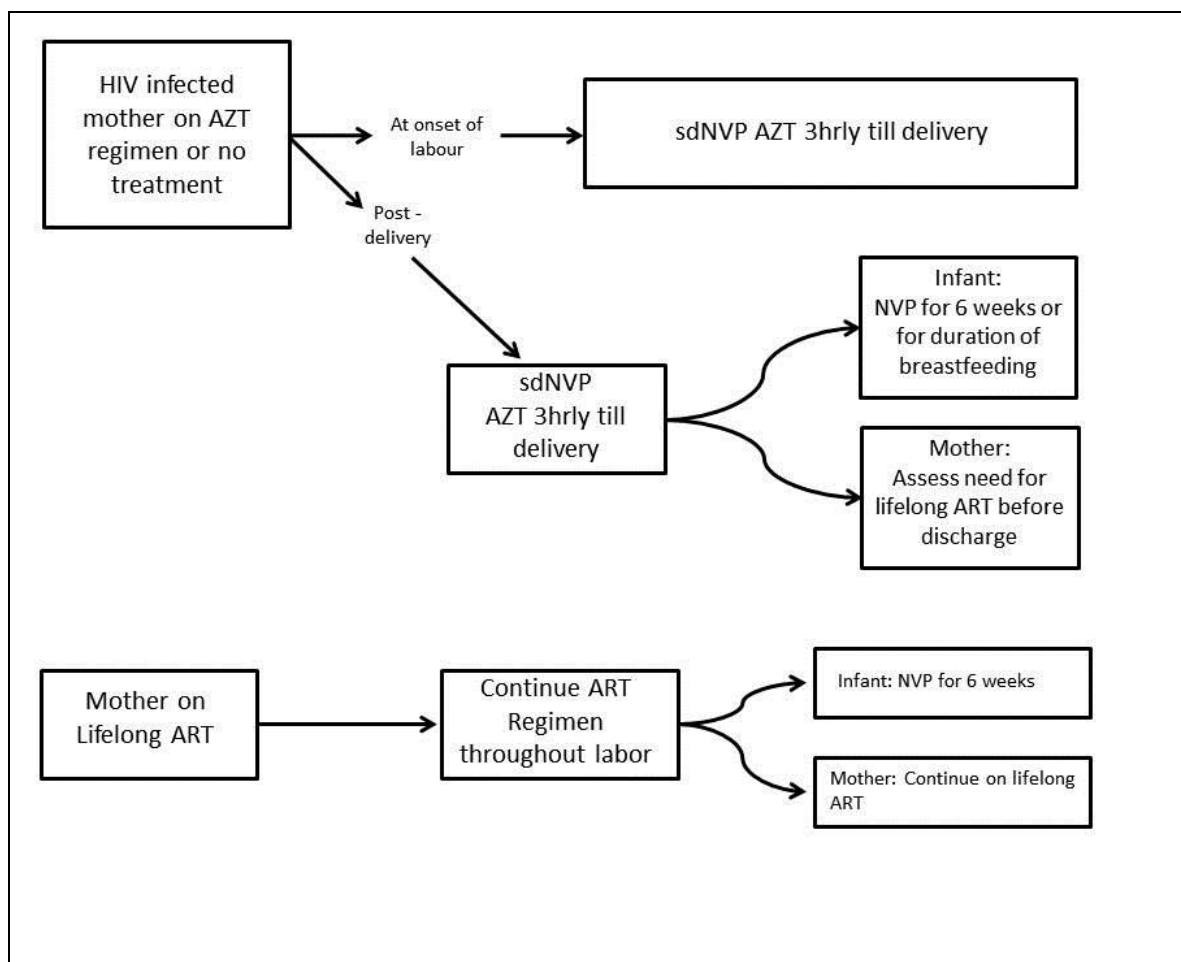


Figure 2-2: PMTCT Algorithm – Intrapartum management (NDoH, 2010: 17)

Because of increased risk of MTCT, the following precautions should be implemented:

- Rupture of membranes; the woman should be given antibiotics to prevent opportunistic infections which are a risk to mother to child transmission of HIV as they further compromise the mother's immunity.
- Assisted deliveries should be avoided as far as possible.
- Caesarean sections should only be performed when there is an obstetric indication and if carried out, prophylactic antibiotics should be given.
- Invasive monitoring procedures such as using scalp probes to monitor foetal condition should be avoided.

- Episiotomies should be performed only for obstetrical indications.
- Suctioning of baby's nose and airway should only be done when there is meconium stained liquor.
- Vaginal examinations should be done according to guidelines to limit risk of infection (4 hourly in latent phase and 2 hourly in active phase)
- Vaginal swabbing should be done with Chlorhexidine before each vaginal examination

Soon after delivery, all HIV exposed infants should be given antiretroviral prophylaxis to reduce MTCT. Thereafter these infants should receive daily Nevirapine for 6 weeks or until breastfeeding stops. The dosage depends on the infant's birth weight.

HIV positive women, selecting formula feeding exclusively, should receive information and practical support including demonstrations on how to safely prepare formula and feed the infant. Women selecting exclusive breastfeeding should be shown how to correctly attach and position the infant during breastfeeding.

An omission of any of the steps in the guidelines will constitute a missed opportunity. These guidelines were used to develop the audit checklist as data-collection instrument.

As referred to above, at the African Union international conference on maternal, newborn and child health on 02 August 2013 held in Johannesburg there was discussion, *inter alia*, on the impact of HIV on women and children and how to ensure increased access to essential HIV services (UNAIDS, 2013). In that conference the South African President, the Honourable Jacob Zuma told the conference delegates that as leaders they possess the power to ensure that no woman dies giving life and that no child dies from an avoidable cause.

His words confirmed the breakthroughs that South Africa has experienced in the quest to stop new HIV infections among children and reduce maternal mortality. According to Professor Abdool Karim, who is a chairperson of the HIV research committee in South

Africa, because of the country's initiatives, the death rate of children and adults has declined by 43% and 20% respectively and life expectancy has increased by 6 years (Francis, 2013). He also mentioned the research undertaken on Nevirapine for exclusively breastfed newborn babies and the findings that this medication was safe and was effective in preventing babies from being infected by HIV through breast feeding. According to Prof. Karim, these findings have been acknowledged by the World Health Organization. This news was broken at the 6th South African AIDS conference, on the 02 July 2013.

Other significant study findings also mentioned by Prof Karim were those of the CHER Trial conducted by South African scientists in Soweto and Cape Town. This trial indicated that administering antiretroviral therapy (ART) to infants immediately after diagnosis, rather than waiting for their CD4 counts to drop or other symptoms to prompt treatment reduced their chance of dying by 76%. It also reduced the chance of their disease progressing, by a measurable 75%. The results of the study led to changes in WHO guidelines and immediate treatment was recommended (Francis, 2013).

In the programmatic update (WHO, 2012) it is stated that if the recommended options given in the current WHO guidelines are implemented properly, they are equally efficacious in reducing the risk of infant infections. In other words, if PMTCT programmes in all the countries are implemented correctly, HIV transmission from mother to child may be overcome.

2.4 Missed opportunities in PMTCT

Missed opportunities in PMTCT are a serious threat to the health of mothers and babies. Over and above the implementation of the revised WHO guidelines (WHO, 2010b), the South African health system also has to deal with many such opportunities as far as the PMTCT programme is concerned. Some of those identified by Stringer *et al.*, (2010) on coverage of Nevirapine-based services to prevent mother-to-child HIV transmission in four African countries which are Cameroon, Cote d' Ivoire, South Africa and Zambia are:

- HIV testing not offered to pregnant women
- Testing not accepted by pregnant women
- Maternal Nevirapine not dispensed;
- Maternal non-adherence to Nevirapine regimen
- Infant Nevirapine not administered.

Other missed opportunities are lack of support by the country's health system for breastfeeding mothers, poor counselling on infant feeding, PMTCT, infant feeding and follow-up services for HIV positive mothers and their children (IRIN, 2011).

A study undertaken by Rispel *et al.* (2009) in the Eastern Cape local services area, with regard to missed opportunities in PMTCT, showed that 76% of antenatal attendees received HIV counselling at an antenatal visit, with 67% undergoing HIV testing. Eighteen percent (18%) of pregnant women who accepted testing were HIV positive and were therefore eligible for PMTCT services, but the number of Nevirapine packs distributed at 28 weeks' gestation was far less than the number of pregnant women with HIV positive results. The Nevirapine packs were distributed to 56% of the HIV positive pregnant women, ranging from 20% at a remote rural clinic to 94% at an urban clinic. The above findings, estimated from the district health information system (DHIS), differed from the estimates based on the reports by the antenatal and postnatal service users. Other missed opportunities identified in the same study were:

- lack of follow up of HIV positive women and their children
- HIV positive pregnant women not aware of the PMTCT programme
- inadequate patient transport
- babies not given Nevirapine syrup within three days of delivery
- few HIV positive women reported mixed feeding and
- health care workers reporting challenges with the recommended infant feeding practices

The above findings are not in line with the objectives of the PMTCT programme. These findings defeat the intensified efforts to prevent new infections in children of HIV positive

mothers, and also the improvement of quality PMTCT services (UNICEF, 2010). The missed opportunities in the PMTCT programme are not confined to one country. In Zimbabwe, where Perez *et al.* (2006) conducted a study on the acceptability of routine HIV testing (“Opt-out”) in antenatal services in two rural districts, it was found that some pregnant women never received information on PMTCT while others were never tested and a few refused to test. These findings correspond with Rispel *et al.*’s (2009) findings.

Poor adherence to the PMTCT guidelines was also confirmed by Van Lettow *et al.*, (2010) in a study on the uptake and outcomes of the prevention of the PMTCT programme in 387 mother-child pairs in Zomba district, Malawi. Their study showed poor uptake of ARVs by both mothers and infants, poor follow-up testing of HIV exposed infants, pregnant mothers refusing to be tested and poor infant feeding practices.

Other findings reported were: staff shortages; poor counselling training leading to inadequate counselling at the time of HIV testing, which is particularly critical in the context of provider-initiated HIV counselling and testing; poor record keeping as well as complex pathways into HIV care, resulting in women having to move from one clinic to another for different services, which presented transport and money difficulties for them. As a result the women were lost in the process (South *et al.*, 2011).

2.5 Summary

In this chapter, the literature study highlighted the significance of MTCT, measures to limit MTCT and how the international community, including South Africa, responded to the challenges posed by the epidemic. Breakthroughs in Mississippi concerning what was termed the “Mississippi miracle baby” and the breakthroughs in South Africa were highlighted. Missed opportunities in the PMTCT were also discussed. The next chapter provides detailed methods and procedures followed in the study.

CHAPTER 3: METHODS AND PROCEDURES

3.1 Introduction

In this chapter a detailed discussion of the methods and procedures is provided.

This chapter builds on the previous one where the literature review provided an overview of what is known about missed opportunities in the PMTCT as well as what is not known, and as such sets the stage for the approach adopted by the study. The study design will firstly be discussed, followed by the methods and strategies employed to ensure rigorous and ethical research.

3.2 Research design

To answer the research question, a typical, descriptive research design as explained by Brink *et al.* (2006:104) was used. This design was intended to describe the phenomenon under study (Brink *et al.* 2006: 104).

The rationale for using a typical descriptive study design was that the researcher merely searches for accurate information about the characteristics of a single sample or about the frequency of a phenomenon's occurrence (Brink *et al.*, 2006:104). Descriptive studies may be used for the purpose of developing theory, identifying problems associated with current practice, justifying current practice, making judgements, or determining what others in similar situations are doing (Burns & Grove, 2005:232). As a descriptive design involves identification of a phenomenon of interest and of the variables within that phenomenon, the development of conceptual and operational definitions of the variables and the description of the variables leads to an interpretation of the theoretical meaning of the findings, and provides knowledge of the variables and the study population that can be used for future research in the area (Burns & Grove, 2005:232).

As missed opportunities related to PMTCT were identified in other areas of health care facilities nationally and internationally through studies conducted previously, the researcher became interested in investigating whether, in the given sub-district of North

West Province, the results would be the same, as little was known about this issue in this area. The results of this study should assist in improving PMTCT service delivery by providing information to the stakeholders, such as the Department of Health, on where the missed opportunities exist. In this context, the descriptive design was used to identify problems with current practice in the PMTCT programme.

The study was contextual in nature, focusing on the said specific health sub-district. Although this sub-district may be regarded as typical of the manner in which the rest of the province's sub-districts function, the findings of this study are not meant to be generalised beyond the studied area. However, lessons could be learned from the missed opportunities identified in this study for use elsewhere.

3.3 Setting

The North West Province has four health districts of which Ngaka Modiri Molema District is one. The population of Ngaka Modiri Molema District is approximately 798445 people (Massyn, Day, Dombo *et al.*, and 2013:404). According to the 2010 Antenatal HIV and Syphilis survey, the HIV prevalence under pregnant women were 25, 9% (NDoH, 2011:70). The study was conducted in three health institutions (maternity units) situated in one of the sub-districts of Ngaka Modiri Molema district, namely Mafikeng sub-district. Figure 3.1 shows the distribution of sub districts of Ngaka Modiri Molema District in the North West province.



Figure 3-1: Ngaka Modiri Molema District with its five sub-districts

These health care institutions are typical of health care institutions of North West Province, which are primarily situated in semi-rural areas, with 75% of the district being rural. The institutions render twenty-four hour health services, including PMTCT services. The three health institutions each conduct on average a total of 51 deliveries per month, totalling about 150 births.

There were a total of 35 midwives with varying degrees of experience, working in these institutions whose responsibilities, amongst others, include:

- Management of minor ailments according to protocols
- PMTCT and HIV Counselling and Testing (HCT)
- Maternal, child and women's health
- Reproductive health services
- Management of chronic conditions.

3.4 Research methods and procedures

In this study a clinical audit of maternity records was done to identify missed opportunities in the PMTCT programme. Data were recorded on a specially developed checklist based on the official policy and guidelines for implementation of PMTCT that were in place at the time.

3.4.1. Population and sample

Maternity records from three health institutions in a selected health sub-district formed the study population. The original plan had been to include all four health institutions in the district but, permission could not be obtained from one of them. After 13 months of waiting for permission to collect data, the decision was made to continue with only three institutions.

The unit of analysis consisted of maternity records and were based on the average number of women who give birth at these institutions per month (approximately 150 deliveries in total). According to the statistical consultant, one month's case records were considered adequate to perform the statistical analysis based on the average number of women who give birth at these institutions per month.

Maternity records from the three health institutions formed the target population. The sample was all the maternity records of pregnant women who delivered in each of the three health institutions in January 2010 and were 125 in total.

3.4.2 Data collection

The development of the checklist as data-collection instrument, the pilot study and the procedure is discussed in this section.

- **3.4.2.1 Checklist**

The researcher used the PMTCT policy and guidelines for the implementation of PMTCT programme in South Africa and Clinical Guidelines: PMTCT (Prevention of Mother-to-Child-Transmission) that were in place during 2008 and 2010 (NDoH, 2008 & NDoH, 2010a) as basis to design a checklist for the clinical audit(See Annexure K).The policy provides a standard against which missed opportunities can be identified. The checklist was developed in consultation with a statistician to ensure that the data could be analysed after collection.

The checklist was compared with the steps required in the PMTCT guidelines for the implementation of the programme as assessment of how well the checklist represents all the components of the measurable variables. The checklist was also presented to subject experts. Refinements were made to the checklist so that it represents all the steps mentioned in the policy and guidelines for the PMTCT programme in South Africa, and were user-friendly.

- **3.4.2.2 Pilot study**

Before data was collected a pilot study was carried out by auditing five maternity records to determine whether the method and procedure were adequate, appropriate and practical (Strydom & Delport, 2005:327; Burns & Grove, 2005:42) to carry out auditing of the patients' records. After the pilot study, there were no refinements needed on the checklist as the results of the pilot study yielded the desired outcomes.

- **3.4.2.3 Procedure**

The clinical audit could only start after the North West Province Department of Health granted permission. Unfortunately it took seven months before permission was granted. After the decision was made to continue with only three of the four institutions,

appointments were secured with the managers of the facilities. Dates for commencement of data collection were agreed upon. The original concept involved making two copies of each of the maternity records and having two assessors review each independently. However, the managers of the facilities were not in favour of the idea of photocopying the files and this was respected. Neither the patient's files nor other documents used in the maternity department were photocopied. The managements of the three health institutions each provided the researcher with a private room where she could work without disturbances. The rooms were spacious and well ventilated with good lighting. They had locks and keys for the researcher to leave the patients' files and other documents secured when she had finished data collection.

All maternity records available at the filing rooms for the month January 2010 in the said three health institutions were audited. As the data-collection was started in June, it was expected that the all the maternity delivery records for January would have reached the filing rooms. The duration of data collection period was one month per health institution, as collecting data was feasible only on weekends; thus data were collected over a period of three months.

The following maternity records were used for the audit:

- Maternity case records, which consisted of information on care rendered during the antenatal, intra-partum, postnatal and neonatal periods;
- Antenatal registers;
- PMTCT registers in which all the pregnant women who tested HIV positive are recorded;
- ARV's registers in which treatment of the HIV positive women and their babies are recorded;
- Counselling registers in which all the pregnant women counselled and tested are recorded;
- Delivery registers in which all the deliveries in that specific health institution are recorded.

The first task was to allocate a code number to each patient's file that was to be audited. Thereafter the researcher used a checklist to audit each patient's file. Each checklist was allocated a code name corresponding with the code name on the patient's file and no private information about the patient (names or addresses) was recorded.

3.4.3 Data management and analysis

Descriptive statistics were used under the guidance of a statistician. After collecting data, the raw data was captured on the SPSS (Statistical Package for Social Sciences) version 21 spread sheet. The total sum of the number of questions was not calculated as all questions were answered individually. This system (SPSS) was used to analyse the data. Data was mainly presented as frequency distribution involving the systematic arrangement of numeric values from the lowest to the highest, together with a count (or percentage) of the number of times each value was obtained (Polit & Beck, 2006:352).

All statistical tables of this phase are presented in chapter four.

3.5 Validity and reliability

The internal validity and reliability of the data-collection instrument and the external validity of the research project as a whole are discussed in this section.

3.5.1 Internal validity

Certainty of the content validity of the checklist for the audit of the maternity records was ensured by using the Policy and Guidelines for the implementation of the PMTCT programme (NDoH, 2010) which is central to the study. The checklist was subsequently presented to two subject experts in mother and child and HIV for face and content validity before the actual data collection, as recommended by Brink *et al.* (2006:160), was done. The subject experts checked it against the contents of the Policy and Guidelines. The most important refinement was to discontinue with the filling in of the checklist after item no. 11, when the audited file was found to be that of a woman who was HIV negative.

3.5.2 External validity

This is the extent to which the study findings can be generalised beyond the sample used in the study (Burns & Grove, 2009: 700). The results in this study are contextual and are not meant for generalization. Although this sub-district may be regarded as typical of the manner in which the rest of the province's sub-districts function, the findings of this study are not meant to be generalised beyond the studied area. However, lessons could be learned from the missed opportunities identified in this study for use elsewhere.

3.5.3 Reliability

Reliability of the study was enhanced by conducting a pilot study to verify whether the instrument (checklist) could be depended upon to yield consistent results if used repeatedly over time on the same person or if used by other researchers. Two different researchers conducted the pilot study separately using the same checklist on the same five patients' files. The checklist yielded consistent results and was thus deemed reliable for data collection by both researchers.

The researcher was experienced in using both the Policy and Guidelines for the implementation of PMTCT programme and the revised version called *Clinical Guidelines: PMTCT (Prevention of Mother-to-Child-Transmission)* as a health care provider. As a result the researcher could use the checklist with understanding.

3.6 Ethical considerations

Burns and Grove and other researchers point out that any research involving human subjects must be conducted in a systematic and ethical manner. Failure to do so will undermine the scientific process and may have negative consequences. A researcher has a great responsibility to protect the rights of all such subjects throughout the research process; this she/he will do by adhering to a set of ethical codes of conduct as set out in Burns and Grove (2005:83) and Brink *et al.* (2006:30).

When dealing with the patients' records, the researcher de-identified protected health information of the patients. This involved removing elements that could be used to

identify an individual or even the name of the area where data was collected (Burns & Grove, 2009: 195).

3.6.1 The right to anonymity and confidentiality

Every research participant has the right to remain anonymous and has the right to know that the data will remain confidential (Burns & Grove 2005:83). Although the researcher was dealing with the records of the patients, she is expected to keep the information confidential especially in relation to the findings of research. All the information obtained during data collection is treated confidentially in that one health facility would not know the outcomes of another health facility. Raw data is not made available to any person who is not involved in this study.

In seeking the information from the patients' records, the researcher adhered to the prescripts of the Access to Information Act (2/2000) and the Patients' Bill of Rights according to the South African Constitution 108/1996). This was done by requesting permission from the Department of Health in North West Province and the CEO's of institutions affected; additionally resulting in the establishment of a trust relationship, developing between the managers and the researcher.

Before data were collected, permission to do so was obtained from the North West Province Department of Health, after which permission was asked from the management of the relevant health institutions. This last step to ask permission to collect data caused a delay and after 13 month when permission was the decision was taken to conclude with three of the institutions.

While the researcher did not have direct dealings with HIV positive women per se, nevertheless their privacy was potentially threatened when the records were analysed. As stated earlier, anonymity were ensured by the researcher not using names but, rather, allocated codes. The coded records were placed under lock and key at the School of Nursing Sciences where they will be held for a minimum period of five years, as required by the document system of North-West University. Thereafter, the records will be destroyed.

3.7 Summary

In this chapter a detailed discussion of the methods used to collect and analyse data was provided. A descriptive research design was used to answer the research question. A checklist was developed, and piloted before data were collected. Validity and reliability were ensured and the data were collected and analysed using the SPSS version 21. Ethical issues were also described. The next chapter addresses the process of analysis and the findings of the study.

CHAPTER 4: FINDINGS

4.1 Introduction

This chapter deals with the findings of the study and describes the missed opportunities in the PMTCT programme in the selected sub-district. Data is presented from the three health institutions discussed earlier. A quantitative approach was followed using the descriptive design.

4.2 Reflection of data analysis

The total of 125 files were audited from the health institution A, B and C. Raw data were captured on the SPSS version 21 spread sheet and then analysed.

Analysis was performed in two phases. The first incorporated all the records of pregnant women who attended the antenatal care clinic. Analysis of the records of HIV negative pregnant women included all the items until item11 on the checklist: one of the records of pregnant women who tested HIV positive on the rapid test and who on the confirmatory test tested HIV negative 0, 8% (1/125) was included in the analyses of the records of those pregnant women who were HIV negative. The second phase of data analysis was applied to all the records of pregnant women who were found to be HIV positive 28% (35/125). The total number of HIV positive women at different stages is presented in table 4.1

Table 4-1 Total of HIV Positive women at different stages

Stage when HIV diagnoses become known	Number	Total
Diagnosed before starting attending ANC	3	3
HIV positive according to Rapid test	+ 33 During pregnancy (32) During labour (1)	36
HIV positive status not confirmed with confirmation test	- 1	35

The analysis was done in two phases because combined analysis of both the records of HIV positive pregnant women and those of HIV negative pregnant women would not

have yielded clear results due to the higher number of records of those pregnant women who were HIV negative compared to those of pregnant women who were HIV positive; hence the need to separate them.

The following calculations were done: missed opportunities during antenatal period (pregnancy), missed opportunities during birth and missed opportunities related to the neonate.

4.3. Demographic characteristics

The demographic characteristics of the pregnant women whose records were audited are outlined.

4.3.1 Age

Of the total number of records audited 82.4% (103/125), was of pregnant women between the age of 15 and 31 years. Women in this age range are deemed to be a high-risk age group for HIV infection as they are a sexually highly active group (NDoH, 2011:9). The remaining 22 (17.6%) of the records audited were of the pregnant women whose age ranged between 32 and 41 years old. Table 4-2 shows the age distribution of the pregnant women whose records were audited.

Table 4-2: Age distribution of patients whose case records were audited

Age (per year interval in years)	Number of records audited (n)	Proportion of sample (%)
15 – 21	43	34.4
22 – 26	39	31.2
27 – 31	21	16.8
32 – 36	15	12
37 – 41	7	5.6
Total sample size	125	100%

4.3.2 Parity

The number of primigravidae (women who are having their first baby) and women who only had one previous baby analysed was 69% (86/125), the number of women with three to five children was 30% (37/125) whereas the number of grande multiparous women (with more than 5 viable pregnancies) was 1% (2/125).

Table 4-3: Parity of patients whose case records were analysed

Parity of patients	No of patients' records	Proportion of sample (%)
0	46	36.6
1	40	32
2	25	20
3	11	8.8
4	1	0.8
5	1	0.8
6	1	0.8
Total	N = 125	100

4.3.3 Gravidity

Close to 70% (86/125) of pregnant women whose records were analysed were between gravida 1 and gravida 2; and approximately 30% (39/125) of the records analysed were of pregnant women who were between gravida 3 and gravida 7.

Table 4-4: Gravidity of patients whose case records were analysed

Gravidity	Number of records	Proportion of the sample (%)
1	43	34.4
2	43	34.4
3	25	20
4	10	8.0
5	2	1.6
6	1	0.8
7	1	0.8
Total	N=125	100

4.3.4 Weeks of gestation at first antenatal visit

The average duration of pregnancy at the first antenatal visit was 16 weeks with 22.4%(28/125) of the sample between 12 – 20 weeks. Weeks of gestation not recorded was 29.6% (37/125)

Table 4-5: Weeks of gestation at first visit

Weeks	No. of records	Proportion of the sample (%)
12 – 20	28	22.4
21 – 28	41	32.8
29 – 35	16	12.8
36 – 38	3	2.4
Gestation not recorded	37	29.6
Total	N= 125	100

4.4 Missed opportunities regarding prevention of mother-to-child transmission of HIV

Missed opportunities were analysed in two steps. First the aspects of prevention of mother to child transmission that are applicable without considering the HIV status were analysed, followed by the aspects specifically applicable to women who are HIV positive.

4.4.1 Missed opportunities according to the audited records of all the pregnant women (irrespective of HIV status)

These are stated according to the order of items on the checklist. See Table 4-6.

Table 4-6: Missed opportunities of all women irrespective of HIV status

Items related to PMCTC	Yes	No	N/A	Not recorded
1. Did she know she was HIV positive before falling pregnant?	2.4% (3)	92.8% (116)	0	4.8% (6)
2. Did she attend ANC?	96.8 (121)	0.8% (1)	0	2.4% (3)
3. Did she attend a group information session	94.4% (118)	0.8% (1)	2.4% (3)	2.4% (3)
4. Did she attend an individual session?	86.4% (108)	0.8% (1)	2.4% (3)	10.4% (13)
5. Did she receive information on VCT and testing?	87.2% (109)	0.8% (1)	2.4% (3)	9.6% (12)
6. Did she agree to be tested?	88% (110)	0	2.4% (3)	10.4% (13)
7. If she declined, was it offered later?	0	0	88% (110)	9.6% (12)
8. Did she agree to be tested later?	0	0	88% (110)	9.6% (12)
9. If she agreed to be tested, was the first rapid test positive?	26.4% (33)	56.8% (71)	2.4% (3)	14.4% (18)
10. If tested negative, was the retest done at 32 wks	56.8% (71)	0	28.8% (36)	14.4% (18)
11. Was post-test counselling done?	80.8% (101)	0	2.4% (3)	16.8% (21)

- 4.4.1.1 *HIV status known at first visit*

Table 4-6 shows the percentage of pregnant women whose records were audited, who came for their first antenatal visit knowing their HIV status. It was evident that 116 (92.8%) of these pregnant women did not know their HIV status. Only 3 (2.4%) of the 125 records analysed showed that women knew their status before becoming pregnant. All three of these indicated that they know they are HIV positive and are already receiving HAART. Six (4, 8%) of the records did not have anything documented regarding the patients' known HIV status. As the researcher could not ascertain whether those who had nothing documented in their files knew their status or not, but had still

presented themselves at the health institution, she deemed this to be a missed opportunity.

- 4.4.1.2 *Antenatal care attendance*

The findings of the analysed records concerning pregnant women's antenatal care attendance were satisfying in so far as 121 (96.8%) of the 125 pregnant women attended antenatal care. Only 1 (0.8%) of the 125 participants was unbooked and arrived during the second stage of labour and 3 (2.4%) did not have anything documented in their files. As the researcher could not ascertain whether or not the latter group did attend antenatal care or not, but had presented themselves at the health institution, she deemed this as a missed opportunity.

- 4.4.1.3 *Attendance of group/individual and HIV counselling and testing (HCT) information session*

The majority of those women whose case records were analysed 117 (89%) attended group/ individual and HCT information sessions. The remainder of the records which contained no written information were deemed to be missed opportunities. Attendance at these information sessions was not applicable for those who already knew their status.

- 4.4.1.4 *Agreed to be tested*

Of the 125 records analysed, 3 (2.4%) were excluded as they were of women who already knew their HIV-status at their first antenatal care. The majority of the women whose records were analysed agreed to be tested 88% (110/125). The remaining twelve records had no information recorded in them and were therefore marked as a missed opportunity.

- 4.4.1.5 *Positive first rapid test*

Of the 125 files audited, more than a third of the women did not know their HIV-status at the first visit. The first rapid test was positive in 26.4% (33/125) audited records. In one

of the files 0.8% (1/125), the result was not recorded as testing was not done because the HIV testing kits were out of stock. This file was grouped together with those which did not have information written in them and were together 14.4% (18/125). No information was recorded as to whether this woman was tested at a later stage. Lack of information was recorded as another opportunity missed by the health care providers.

From the analysis of the records of those pregnant women 56.8% (71/125) who were retested after testing negative with the HIV rapid test, none were later found to be HIV positive.

- **4.4.1.6** *Post-test counselling*

Analysis of the records revealed that post-test counselling was done with 101 (80.8%) of the pregnant women but in 20 (16%) of the audited files there was no information recorded. The “no information recorded” was a worrying factor in that these pregnant women whose records were analysed were not given optimal care, despite them being in contact with the health care providers. This, according to the researcher, was regarded as a missed opportunity.

4.4.2 Missed opportunities according to the audited records of the HIV positive pregnant women

The second phase of the data analysis focused on the findings from the records of the HIV positive women.

Table 4-6 depicts that 3 (2.4%) of the records analysed were of the pregnant women who knew their positive HIV status before attending the antenatal clinic. After the HIV rapid test, another 26.4 % (33) of the pregnant women were found to be HIV positive. Included in this number (33) was the file of the woman who came during labour being unbooked, was tested for HIV and the results were positive. In total the records of 36 of the pregnant women indicated that they were HIV positive after the first rapid test. However, 1 (0.8%) of the records analysed indicated that the woman was found to be HIV negative after the confirmatory test and as a result she was grouped with the other

HIV negative results. This brought the total of the records in which women in the study were found to be HIV positive, to 35.

Auditing of the records of pregnant women who were found to be HIV positive continued from item 12, the confirmatory test for those found to be HIV positive on the checklist, to item 43 on the checklist. The records of those women found to be HIV negative after the confirmatory test, were grouped together with those which were found to be HIV negative from the HIV rapid test and were then analysed together from item 1 on the checklist to item 11 on the checklist.

- *4.4.2.1 Missed opportunities during the antenatal period according to the audited records for those pregnant women who are HIV positive*

The analysis of missed opportunities during antenatal care continued, starting from the confirmatory HIV test (item 12).

Table 4-7: Missed opportunities during antenatal period for HIV positive pregnant women

Items on Check-list	Yes	No	N/A	No Info/Doc
12. Was a HIV confirmatory test done?	74.3% (26)	2.9% (1)	8.6% (3)	14.2% (5)
13. Was blood for CD4cell count taken?	57.1% (20)	2.9% (1)	-	40.0% (14)
14. Was CD4 cell count recorded in the file 2weeks after the blood was taken?	48.6% (17)	2.9% (1)	-	48.6% (17)
15. Was TB screening done?				100% (35)
16. Was AZT given when indicated?	65.7% (23)	-	11.4% (4)	22.9% (8)
17. Was HAART initiated when indicated?	2.9% (1)	-	74.3% (26)	22.9% (8)
18. Was Cotrimoxazole prophylaxis given?	8.6% (3)	5.7% (2)		85.7% (30)
19. Was she screened and treated for opportunistic infections	60% (21)			40% (14)
20. Was she on HAART before pregnancy and continued with regime	8.6% (3)	2.9% (1)	65.7% (23)	22.9% (8)
21. Did she get information on the risks of breastfeeding& formula feeding?	57.1% (20)	-	-	42.9% (15)

- *HIV confirmatory test*

Evidence of confirmatory tests was found in 26 (74.3 %) files out of 35 audited files of HIV positive women. In one audited file 2.9% (1/35), the necessity of the confirmatory test was not done. A date was indicated in the record as to when this will be done but up to the day of the women's discharge nothing was written in the file, and the researcher interpreted this as a missed opportunity in the PMTCT programme. Confirmatory tests were not done on three of the women whose records were analysed as these belonged to the three pregnant women who became pregnant already knowing their HIV status. The researcher was concerned about the records 14.2% (5/35) of the pregnant women who tested HIV positive with the rapid test but had nothing recorded in their files regarding confirmatory test. This leaves the question open as to whether the confirmatory tests were done or not, or were done and not recorded. This constituted a missed opportunity in the analysis, and particularly so when the women concerned have tested as HIV positive.

- *CD4 cell count*

The findings, with regard to blood collected for the CD4 cell count only 2.9% (1/35) of the analysed records of the pregnant women indicated that blood was not taken for a CD4 cell count and as a result this same pregnant woman did not come for her 2 week follow-up for the results. This was recorded as a missed opportunity in the PMTCT programme. Apart from the abovementioned woman, analysis of the records revealed that there were 57.1 % (20/35), who had blood taken for their CD4 cell count but at the two weeks follow-up, only 48.6% (17/35) had the results written up in their files. The rest, comprising 48.6 % (17/35) of the analysed records, had no information recorded. This was also recorded as a missed opportunity in the PMTCT programme.

- *Screening for TB and assessment according to WHO clinical staging*

None of the audited records of the pregnant women had any information recorded on the screening for TB or assessment according to the WHO clinical stages, which was regarded as a missed opportunity in the PMTCT programme.

- *Administration of AZT, and initiation of HAART*

Table 4.6 shows that 65.7% (23/35) of pregnant women's analysed records indicated that they had received AZT for PMTCT. It also showed that HAART was initiated in the analysed record 2.9% (1/35) of the pregnant woman who was admitted being in the second stage of labour. The other three records of those pregnant women who, during their first visits, were already on HAART were not included under that item. Of concern were the records of the HIV positive pregnant women which had nothing recorded in them. The researcher was unable to ascertain whether the ARV's were administered and not recorded or not administered at all. This was recorded as a missed opportunity in the PMTCT programme.

- *Cotrimoxazole prophylaxis and treatment of opportunistic infections*

According to the findings in Table 4.6, the analysed records of the pregnant women revealed that 5.7% (2/35) were not given Cotrimoxazole as a prophylactic treatment for preventing serious infection, indicating a missed opportunity. Forty percent (14/35) of the records did not have anything recorded in them, thus the researcher could not establish whether or not the pregnant women were treated for opportunistic infections or whether they were prophylactically treated with Cotrimoxazole as nothing was recorded in those analysed records. This was a missed opportunity in the PMTCT programme.

- *Information about breastfeeding and replacement feeding*

Of the 35 records of HIV positive pregnant women in the study, 42.9% (15/35) had nothing recorded in them concerning information about breastfeeding or replacement feeding, adding yet another missed opportunity.

- *4.4.2.2 Missed opportunities during the birth process according to the audited records of the women who are HIV positive*

Table 4-8 outlines some of the missed opportunities that were identified after analysis of the records audited.

Table 4-8: Missed opportunities with regard to PMTCT during the birth process

ITEMS on Checklist	Yes	No	N/A	No Info/Doc
22. Status unknown when admitted in 1st stage of labour	0	0	100% (35)	0
23. Status unknown when admitted in 2nd stage of labour	2.9% (1)	0	97.1% (34)	0
24. Agreed to be tested	2.9% (1)	0	97.1% (34)	0
25. Received ARV's for PMTCT	62.9% (22)	0	11.4% (4)	25.7% (9)
26. Continue with HAART during labour	2.9% (1)	0	62.9% (22)	34.2% (12)
27. Prophylactic antibiotics for low CD4 cell count, AIDS and ruptured membranes given?	0	5.7% (2)	62.9% (22)	31.4% (11)
28. Membrane ruptured more than 4 hours?	5.7% (2)	0	62.9% (22)	31.4% (11)
29. Frequency of Per vaginal examination recorded	68.6% (24)	0	0	31.4% (11)
30. Use of Chlorhexidine when swabbing	0	0	0	100% (35)
31. Episiotomy performed?	5.7% (2)	68.6% (24)	0	25.7% (9)
32. In case of assisted delivery, was HIV status considered?	0	0	100% (35)	0
33. In case of C/S, was antibiotics continued	0	0	100% (35)	0

- *Pregnant women admitted during 1st or 2nd stage of labour with status unknown and treatment during labour for all HIV positive pregnant women.*

One of the analysed records was of a pregnant woman who was admitted during the second stage of labour not knowing her HIV status. She was tested after delivery and found to be HIV positive and was put on treatment together with her baby.

Of the 35 records of HIV positive pregnant women analysed, 25.7% (9/35) contained no information regarding whether the women had received ARV's for PMTCT or not. Of those records of pregnant women who were supposed to continue with HAART, only 2.9% (1/35) was shown as continuing with HAART while the other three had nothing documented in their records. The absence of documentation in those records is of concern as there is no way to tell whether the treatments were administered and not recorded or were not administered at all. This was a missed opportunity in the PMTCT programme.

- *Prophylactic antibiotics for low CD4 cell count ≤ 350 or signs of AIDS or ruptured membranes longer than 4hours*

No audited records showed low CD4 cell count or signs of AIDS indicated in them. According to the analysed records of the HIV positive women, 5.7% (2) of those pregnant women who had ruptured their membranes for longer than 4hours were not given prophylactic antibiotics. These constituted a missed opportunity in the PMTCT programme.

- *Frequency of vaginal examination and performance of episiotomy*

As depicted in Table 4-8, 68.6% (24/35) of the analysed records of the pregnant women who were HIV positive, had the frequency of per vaginal examination recorded in their files whereas 31.4% (11/35) had nothing recorded as far as the frequency of vaginal examination was concerned. In addition, 5.7% (2/35) of the analysed records indicated that episiotomies had been done with no written explanation of why these were performed. These were further missed opportunities in the PMTCT programme.

- *Assisted deliveries and caesarean sections*

These items on the checklist were not applicable as all the audited records were clinic deliveries and no assisted deliveries or caesarean sections were performed.

4.4.3 Missed opportunities relating to the neonate

Table 4-9 outlines some of the missed opportunities related to the neonate that were identified after analysis of the records of the women who were HIV positive.

Table 4-9: Missed opportunities relating to the neonate (n=35)

ITEM on Checklist	RESULTS			
	Yes	NO	N/A	No Info/Doc
34. If neonate was suctioned, was it indicated?			20% (7)	80% (28)
35. If Mother on PMTCT or HAART – did neonate got NVP & AZT	68.6% (24)		2.9% (1)	28.5% (10)
36. If Mother's status known or unknown and did not receive optimal ARV's for PMTCT` or HAART, did the neonate receive treatment for 28 days	2.9% (1)		68.6% (24)	28.5% (10)
37. Did mother received guidance on safe infant feeding - using AFASS criteria	68.6% (24)	-	-	31.4% (11)
38. Was mothers' infant feeding choice confirmed?	71.4% (25)	-	-	28.6% (10)
39. Mother made aware of the risk of mixed feeding?	65.7% (23)			34.3% (12)
40. If mother chose breast feeding, did she received support	8.6% (3)		48.6% (17)	42.9% (15)
41. Was mother informed about heat treatment of breast milk?			48.6% (17)	51.4% (18)
42. If mother opted for formula feeding, was demonstration done?	2.9% (1)		51.4% (18)	45.7% (16)
43. Was arrangement done for supply of formula feeding?	48.6% (17)		51.4% (18)	

• 4.4.3.1 Suctioning baby at birth

Table 4-8 presents the percentages of those neonates who did not need routine suctioning after birth as their Apgar scores were good. Of concern were the 80% (28/35) of the analysed records which did not have information written in them regarding whether the neonates were suctioned or not. This is important to record as suctioning of the neonate at birth constitutes one of the risk factors in transmitting the HIV infection to the baby. This was another missed opportunity.

- 4.4.3.2 *Neonate receiving treatment for 7 days and for 28 days*

The record of HIV positive pregnant women analysed showed that 68.6% (24/35) of neonates received Nevirapine at birth and AZT for 7days while 2.9% (1/35) of neonates received Nevirapine at birth and AZT for 28 days as the mother was unbooked and arrived in the second stage of labour. The analysed records of 28.5% (10/35) of these HIV positive pregnant women also showed no documentation regarding whether the neonates received ARV's or not. This constituted a missed opportunity in the PMTCT programme.

- 4.4.3.3 *Guidance on safe infant feeding using AFASS criteria and confirmation of the mother's choice before infant was attached to the breast*

In 31.4% (11/35) of the records analysed there was no documentation of whether the mothers were given guidance concerning safe infant feeding, or not. With regard to confirmation of the mother's choice before the infant was attached to the breast, 28.6% (10/35) of the records contained no documentation as to whether confirmation was done or not. These omissions are also regarded as missed opportunities in the PMTCT programme.

- 4.4.3.4 *Information about the risks of mixed feeding*

In the 35 analysed records of the HIV pregnant mothers, 34.3% (12/35) did not have any written documentation in their files on information being given to them about risks of mixed feeding, which was a missed opportunity.

- 4.4.3.5 *Information and support on the technique that facilitates exclusivity for mothers who chose breast feeding*

Out of 18 analysed records of the HIV positive mothers who chose to breastfeed, only 8.6% (3/35) were given information and support for this choice. Forty- two comma nine percent, which represents 15/35, had nothing written in the records in this regard. In all of the 18 records of the mothers who chose breastfeeding, nothing was indicated in writing about heat treatment of milk. "No documentation" will be taken as a missed

opportunity in the PMTCT programme as it could not be ascertained whether it was done or not.

- 4.4.3.6 *Demonstration for those who chose formula feeding*

Of the 35 records of HIV positive mothers analysed, (48.6 % (17/35) were shown to have opted for formula feeding. Of these, only 2.9% (1/35) was given a demonstration and an opportunity to practise. Nothing was documented in 45.7% (16/35) of the records of those who opted for formula feeding and it could not be established whether demonstrations were done for the rest of the women in this group or not. This was a missed opportunity. Arrangements were made to ensure an uninterrupted supply of the infant formula for all those who opted for formula feeding.

4.5 Summary of the findings

The findings in this study were classified in three sections namely missed opportunities to prevent MTCT during the antenatal period, labour (birth) and also with regard to how the neonate was treated after birth. The following chapter addresses the discussion of the findings, conclusions, limitations and recommendations of the study.

CHAPTER 5: DISCUSSION OF FINDINGS, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 Introduction

In the previous chapter, the analysis of the data collected was reported on. In this chapter the focus is on the discussion and interpretation of these findings as well as on conclusions, limitations and recommendations.

5.2 Discussions of findings

In general, the three institutions from which the maternity records were audited were doing good as far as encouraging the pregnant women to attend antenatal care and this is evidenced by 96.8% (121/125) attendance of antenatal care and 87.2% (109/125) of antenatal attendees offered (pre-test) information on counselling and optional testing. According to WHO (2010: 73), some of the key barriers in the intervention of MTCT programmes are constituted by women who do not access ANC or do not have attended deliveries meaning they deliver their babies alone without a health care professional in attendance. This aspect does not appear to be a problem in the facilities where this study was conducted.

5.2.1 Women not tested during pregnancy

From the women (n=125) who attended antenatal care, the findings indicated that 2.4% (3/125) knew their status before pregnancy but that 9.6% (12/125) did not receive information on VCT, although they attended antenatal care. On the other hand one pregnant woman representing 0.8% (1/125) attended the group information session as well as the individual information session and agreed to be tested but was not tested because there were no HIV test kits available. This constitutes a missed opportunity

These findings were consistent with the study by Temmerman *et al.* (AIDS, 2003) who found that although counselling is a routine part of antenatal care; over 1000 pregnant women in their study did not receive individual pre-test counselling. Another study which had similar findings was reported in the Eastern Cape Province by Rispel *et al.* (2009); which revealed that 24% of pregnant women were not given counselling. This study is also consistent with the study by Perez *et al.* (2006), performed in Zimbabwe where pregnant women reported receiving neither group education in the ANC clinic ($p < 0.001$) nor individual pre-test counselling ($p < 0.001$).

It is extremely important to have information regarding PMTCT documented for all the pregnant women who visit antenatal clinics. This is the only way in which progress towards elimination of mother to child transmission of HIV can be established. One of the key global indicators for PMTCT is the number and the percentage of pregnant women tested and counselled, emphasising the importance of this intervention. If women are not tested, they cannot be identified as HIV positive and consequently are not offered any PMTCT interventions or other needed and available support.

According to the findings of this study, pregnant women who agreed to be tested and had undergone a rapid test for HIV revealed the following results: 56.8% (71/135) were negative and 26.4% (33/125) were positive. The findings further indicated that 14.4% (18/125) did not have documentation in their maternity records as to whether they had agreed to be tested or not. Their HIV status was therefore not known, despite the fact that they attended antenatal care.

In one of the files it was indicated that the testing kits were out of stock. In this case the client was ready to be tested but the service provider could not help as the resources had run out.

This constituted a missed opportunity in the PMTCT programme. Shortage of HIV test kits limits the efficiency of the PMTCT programme. According to a weekly paper of the Centre of Disease Control (CDC) (2013) on the impact of the innovative approaches to PMTCT, significant challenges and questions remain concerning the implementation of PMTCT in Malawi. The CDC stated that although high quality HIV testing is accepted by

nearly all women at antenatal care in resource-limited settings, the Malawi Ministry of Health estimates that failure to ascertain maternal HIV status at antenatal care is now responsible for 54% of new infant infections in that country. This is most likely as a result of irregular availability of test kits and poor quality assurance of rapid testing at antenatal care sites. This information concerning the irregular availability of HIV test kits in antenatal care settings is confirmed by the findings of this study.

5.2.2 Re-testing of HIV negative women at 34 weeks, confirmatory tests for those who tested HIV positive, CD4 cell count and TB screening of HIV positive pregnant women

It was encouraging that the majority of women who tested negative before the 34th week in the records analysed, were re-tested at the 34th week and were still found to be HIV negative. It was not possible for the researcher to ascertain, from the 14.4 % (18/125) of non-documented audited files, whether those pregnant women declined to be re-tested or were tested as the necessary information was not recorded. In a previous study done by Stringer *et al.* (2010), 3.9% of pregnant women simply did not accept HIV re-testing.

Pregnant women, according to WHO's (2007: 4-9) recommendations on PMTCT, have the right to decline HIV testing. It is not mandatory or compulsory, but at every ANC visit the health care provider should ensure that all the women not yet tested receive counselling and are informed about the benefits of testing.

According to the National Policy Guidelines on PMTCT (DoH, 2008), HIV positive women should have a confirmatory test done, which, if still yielding positive results, means that they should then have their CD4 cell count checked. Confirmatory testing was not done for 2.9% (1/35) of the women whose first rapid test was found to be HIV positive and another 2.9% (1/35) of the HIV positive pregnant women did not have her blood for the CD4 cell count taken. It was mentioned in the particular woman's file that blood for the CD4 cell count would be taken the following month. Fourteen point two percent (5/35) of the HIV positive women had no documentation regarding confirmatory

tests and 40.0% (14/35) did not have documentation on whether blood for their CD4 count was taken or not, in their maternity records.

From the data obtained from all audited files of women who were HIV positive, 100% (35), none were recorded as having been screened for TB or assessed according to WHO clinical staging and guidelines. It was therefore clear that this was not routinely done. On the “Discharged” files, there was no information with regard to when the mother should come back or if she was referred to other services. If HIV positive pregnant women are not screened for TB and clinically staged, it becomes difficult for the health care provider to initiate a proper regimen of treatment for these women.

5.2.3 HIV positive pregnant women who not receiving treatment during pregnancy or labour

It was of concern that 22.9% (8/35) of the women who were HIV positive had no notation in their files or in any other register as to whether they had received ARVs for treatment or prophylaxis. Five point seven percent (2/35) files of HIV positive pregnant women audited did not receive prophylactic antibiotics for a low CD4 cell count and AIDS while 2.9% (1/35) of the audited HIV positive pregnant women’s files had prolonged rupture of membranes yet not given prophylactic treatment. These findings are consistent with the study by Du Preez *et al.* (2006) who, in their study found that in 25% of the obstetrics files audited, nothing was recorded as to whether the women received Nevirapine or not. Other studies done with concurring findings are those of Stringer *et al.* (2010) and Nkoki *et al.* (2007) where HIV positive women had not received treatment during pregnancy or during labour.

The researcher was encouraged to find that in one of the audited files an unbooked pregnant woman, 2.9% (1/35), who was admitted during the second stage of labour, agreed to be tested after delivery. She was found to be HIV positive and started on treatment.

HIV positive pregnant women should receive ARVs during labour to prevent transmission from the mother to the child according to the PMTCT policy. When the files

were audited in this study, 25.7% (9/35) of HIV positive women had no information in their files or in the PMTCT registers on whether they received ARVs or not.

A PMTCT programme, without treatment, is of no use to prevent the infant from contracting the HI virus. As the HIV positive pregnant women presented themselves to the health care provider during pregnancy and labour, the health care provider had an opportunity to seize this chance, offer VCT and administer treatment to these women in order to affect PMTCT. The opportunity was missed and no follow-up information was indicated in the files. PMTCT guidelines were not followed in implementing the programme.

5.2.4 Missed opportunities during the birth process

It is clear that the midwives in the labour units understand that membranes are not to be ruptured during labour and they are doing well in that regard. Nevertheless, there was cause for concern where 5.7% (2/35) of HIV positive pregnant women who were diagnosed before labour, had their membranes ruptured for more than 4 hours but did not receive antibiotic prophylaxis, which again constituted a missed opportunity.

Concerning vaginal examination (4 hourly in the latent phase and 2 hourly in the active phase), some of the midwives working in the labour units had clarity in this regard. This was shown by the partogram in the women's files that was 68.6% (24/35). The researcher was concerned about the remaining 31.4% (11/35) of those files with no information about the partogram recorded in them. There was no documentation on vulval swabbing in any of the audited files.

Performance of episiotomies increases the risk of transmission of HIV infection to the unborn child and as a result it is discouraged (DoH, 2002). In this study it was found that 25.7 % (9/35) of the audited files had no documentation on episiotomies, tears or an intact perineum. Episiotomies were performed on 5.7% (2/35) of HIV positive women and no reasons were indicated. This was regarded as another missed opportunity with regard to PMTCT of the HI virus. These findings concur with the previous study by Du Preez *et al.* (2006) who found that 31.66% of the women in their research study, who were in labour, had episiotomies performed.

It should be noted that all the files audited were of the pregnant women who delivered in the health care centres: as a result there was no mention of assisted deliveries or caesarean sections.

5.2.6 Counselling on infant feeding

According to the National Policy Guidelines on PMTCT (NDoH, 2008), HIV positive women must be given information on exclusive breast feeding and formula feeding. This information should be routinely given when health providers deliver health education to pregnant women. The study findings indicated that 57.1% (20/35) of the HIV positive women received information on breastfeeding and replacement feeding, whereas in 42.9% (15/35) of the audited files of the HIV positive women, no information was recorded in their files or in any other register concerning infant feeding counselling during pregnancy. The absence of infant feeding information may mean that infants from these mothers might be exposed to HIV infection during the postnatal period and this would reduce the efficiency of the PMTCT programme.

After delivery, the midwife should confirm the mother's choice of infant feeding made during the antenatal period. In the study it was found that in 28.6% (10/35) of audited files, there was no documentation in this regard whereas in 71.4% (25/35) there was documentation. The audited files showed that only 8.6% (3/35) of the HIV positive women who opted for exclusive breastfeeding received information and support on breastfeeding techniques. Those to whom this item was not applicable comprised 48.6% (17/35) as they opted for formula feeding. The participants who had nothing documented in the files were 42.9% (15/35). There was nothing documented on heat treatment of the breast milk in 48.6% (17/35) files and it was not applicable in the 51.4% (18/35) of the audited files. The reasons for the health care providers not documenting such facts might be those cited by Leshabari, Blystad, De Paoli and Moland (2007:27) who, in their study, found that the nurse counsellors were hesitant to inform the mothers about heat treated breast milk and wet nursing as ways to exclusively give breast milk as they were concerned that these methods would not be acceptable in the community. Culturally, expression of breast milk is associated with the death of a child and if a woman practises this when her child is alive and healthy, she is labelled as a witch.

For those files of HIV positive mothers who opted for formula feeding, it was found that a demonstration on the preparation of formula feed was done for only 2.9% (1/35) mother. There was no documentation on 45.7% (16/35) of the audited files and it was also found that 51.4% (18/35) were in the category “not applicable” as they belonged to those who opted for exclusive breastfeeding. Whether the 45.7% (16/35) received a demonstration and practice opportunities regarding preparation of commercial infant formula cannot be confirmed as there was no documentation for these. Arrangements to ensure an uninterrupted supply of infant formula were indicated in all 48.7% (17/35) of those who opted for formula feed.

The findings regarding the HIV positive pregnant women who did not receive infant feeding advice from health care providers are consistent with a previous study undertaken by Leshabari, Blystad, De Paoli and Moland, (2007:27) on HIV and infant feeding counselling, in which it was found that nurse counsellors found themselves unable to give qualified and relevant advice to HIV positive women on how best to feed their infants as they lacked confidence in their knowledge of HIV and infant feeding.

Infant feeding is one of the most difficult issues that PMTCT programmes confront. In Africa, prolonged (although not exclusive) breastfeeding, is the norm. Other safe alternatives are usually unavailable, unaffordable or culturally unacceptable (Raisler & Cohn, 2005: 278).

5.2.7 PMTCT programme relating to the neonate

The National Policy Guidelines on the PMTCT programme give directives on how to handle newborn babies of mothers who tested HIV positive during pregnancy, up to 9 months postpartum. One of the practices that should be avoided is suctioning of the mucous membrane directly after birth unless indicated, as this may damage the membranes, thus increasing the chances of transmission of infection to the babies. If indicated, it must be done gently and with caution. In this study there was no information documented in 80% (28/35) of the audited files as to whether newborns were suctioned; only in 20% (7/35) was it indicated that suctioning was not applicable as the Apgar scores were good.

This study also found that 28.5% (10/35) of the babies of mothers who were HIV positive had no documentation as to whether they received prophylactic treatment or not. These findings are consistent with the previous study undertaken by Du Preez *et al.* (2006: 514) who found that only 1% of the neonates received Nevirapine while the rest had no documentation. This is cause for concern with regard to the efficacy of the PMTCT programme.

In this study lack of recording emerged as a real concern and its absence featured in all the steps of the PMTCT programme. This finding was consistent with the previous study by Du Preez *et al.* (2006) which found that for the 25% of pregnant women who were meant to receive Nevirapine, no record was kept to indicate whether or not this was administered.

According to Collins (2009:8-10), the medical record or chart, resides at the top of the “health care food chain” as the ultimate testimony of the care rendered. “If it wasn’t documented, it wasn’t done”, so goes the old adage alluded to by Collins. She also mentions that in every lawsuit, the medical records are scrutinised to determine the quality and the quantity of care rendered. She urges that health care providers should be conscientious about the importance of recording and record keeping.

From the above discussions it is clear that the health care providers had acquired some knowledge about PMTCT guidelines, as shown in the audited files and registers but do not 100% practice it according to the PMTCT guidelines.

It was evident that most of the missed opportunities are not client-oriented but health system failure oriented. Pregnant women presented themselves for service to the health care providers but they were failed as they were not treated the way they should have been, thus not receiving optimal benefits from the PMTCT programme.

Missed opportunities in the PMTCT programme that were health system oriented ranged from non-documentation of actions done, non-availability of supplies such as HIV test kits, to health care providers failing to give information to HIV positive mothers

and failing to provide service as required by the PMTCT programme to pregnant women who presented themselves to the health institution.

The cumulative number of missed opportunities found in the audited files in this study could result in a significant number of children not benefiting from the PMTCT programme.

5.3 Conclusions

Conclusions arising from the findings are categorized according to the groupings of the checklist: Pregnancy (antenatal care), Birth (intrapartum care) and Neonate (including postpartum care).

Generally speaking, the health care providers of the three health institutions have some knowledge about the PMTCT programme. This conclusion was evident from the audited maternity files, various registers and other records used in these maternity units. They followed the steps described for the PMTCT programme by the Department of Health. This information concurs with the findings by Du Preezet *al.* (2006) in their study on intrapartum practices to limit vertical transmission of HIV, who found that midwives largely had sufficient knowledge on PMTCT programme but this knowledge is not implemented adequately.

5.3.1 Conclusions on missed opportunities during pregnancy

One of the conclusions reached is that pregnant women in the sub-district of Ngaka Modiri Molema do attend antenatal care. Only a small percentage did not do so, according to the audited records and those who were classified as unbooked.

Although most women attended antenatal care, there were missed opportunities related to counselling, testing, re-testing, administration of ARVs, confirmatory tests, blood for CD4 cell count, prophylaxis for opportunistic disease, TB screening and infant feeding that were health system oriented and health care providers oriented.

Other conclusions drawn during the pregnancy phase of the analysis were that pregnant women who attend antenatal care all gave their consent to be tested for HIV. It was at

this point in the programme that one (0.8%) pregnant woman was not tested as there were no resources for testing and 13.6% were without information on testing in their records.

5.3.2 Conclusions on missed opportunities during birth

One conclusion that can be drawn from the findings in this regard is that during labour, opportunities to prevent mother to child transmission of HIV were missed, particularly in administration of prophylaxis for the prolonged rupture of membranes, the performing of episiotomies with no indication cited and also failing to document whether an intervention was done or not.

5.3.3 Conclusions on missed opportunities related to the neonate

There are a number of conclusions related to this period, among which is the lack of information documented in some of the records of HIV positive mothers regarding whether their neonates were suctioned at birth or not, whether they received ARVs or not, whether these mothers received information on techniques and support, including demonstrations as far as infant feeding is concerned as well as for the heat treatment of breast milk for those who opted for exclusive breast feeding.

However, an analysis of the cumulative number of missed opportunities cited above namely: under HIV testing 14.4% had nothing recorded in their files, blood for CD4 cell count not taken in 2.9% files, no information about ARVs given during pregnancy in 22.9%, antibiotics(prophylaxis) not administered in 5.7%, ARVs not recorded in 25.7% of the files of HIV positive women during labour and nothing recorded about NVP and AZT for the neonate in 28.5%;indicate that there is a significant number of missed opportunities if these gaps are added together.

It was also noted that documentation is a cause for concern as most of the files had nothing related to MTCT written in them. According to the SANC regulations this falls under acts or omissions and are warranting disciplinary action from the SANC (Regulation no. R2490).

Almost all the files audited showed that these women attended antenatal care three or more times and yet pertinent information was not documented.

The Department of Health (North West) has introduced a checklist for health care providers on what to do when caring for a pregnant woman during antenatal care and has incorporated some PMTCT information into it. The health care provider is required to mark off all procedures done/given to the woman during antenatal care against the checklist. Most of these checklists had nothing marked on them but were attached to the audited files.

5.4 Limitations

Limitations are important factors as they reduce the validity and reliability of the study. The following points describe the limitations of the study:

- (1) One of the institutions originally selected for the study had to be withdrawn. This institution had the highest number of patient files, and as a result the target population was considerably reduced.
- (2) In view of the fact that only participants from the sub-district in Ngaka Modiri Molema district of the North West Province participated in this study, the findings cannot be generalised to the midwifery record population of other health institutions outside of this sub-district although enough information is provided for the reader to compare his/her own setting with the research setting in this study.
- (3) A few of the women were booked for antenatal care at other health facilities and only came to the selected (participating) health institution for the birth itself. Their antenatal cards with crucial information were not available to the study.
- (4) Due to the fact that registered midwives responsible for the PMTCT programme do not work over weekends, the researcher had to suspend the data collection process in some instances, to wait for Mondays when they were on duty so as to access the PMTCT registers, which in turn posed a challenge as these records would be in use at that time.

5.5 Recommendations for nursing education, nursing research and midwifery practice

In this section, recommendations, with reference to the findings of the study, the literature as well as conclusions drawn, are made for nursing education, nursing research and midwifery practice

5.5.1 Recommendations for nursing education

Recommendations for nursing education are intended to assist the midwives in managing HIV positive pregnant women and acquiring relevant knowledge and skills in implementing the PMTCT programme.

- (1) The findings of this research would be of value when included in the curricula of the four year basic programme of nursing, especially within the midwifery curriculum, the one year diploma in midwifery and also in the one year diploma in advanced midwifery, where the students are taught about the PMTCT programme and the importance of adhering to the steps set by the National Department of Health as these will contribute to the reduction of transmission of HIV from mother to child.
- (2) For the midwives who work in the maternity units, these findings and the PMTCT guidelines should form part of the in-service training program so that they may continually be updated on the issues pertaining to the PMTCT programme.
- (3) Workshops and symposia should be conducted where the midwives would learn how to be competent in the implementation of PMTCT programme and also learn about the importance of documentation in all their dealings with pregnant women.

5.5.2 Recommendations for nursing research

According to the findings, literature, conclusions and shortcomings of this research, the potential for further research in the field of missed opportunities in the PMTCT programme suggests the following possible focus areas:

- (1) The role played by maternity unit managers in the PMTCT programme in terms of the implementation thereof
- (2) A phenomenological study with regards to the PMTCT programme implementation as related to health care providers
- (3) An exploration of views of the health care consumers with regards to the PMTCT programme

5.5.3 Recommendations for midwifery practice

Recommendations for midwifery practice have reference to the statement in Chapter one in the section addressing background and rationale, where it is suggested that the results of this study will assist in improving PMTCT service delivery by providing information to the stakeholders, such as the Department of Health, on where the missed opportunities exist, and how they may be addressed in order to improve the implementation of the PMTCT programme.

- (1) The checklist provided by the Department of Health concerning basic antenatal care (BANC) should include intrapartum and immediate postpartum information in order to guide the midwife as to whether all care needed for the PMTCT programme is given to the patient.
- (2) On discharge of the patient this checklist must be consulted to see if the HIV positive mothers received the necessary care. By so doing, this will ensure that all mothers receive optimal benefit from the PMTCT programme.
- (3) Documentation of every action done to /for the health care consumer should be a priority on the health care list. This would enable the health care providers to be able to assess whether their intervention is achieving the desired results or not.
- (4) In addition, resources for the PMTCT programme like HIV test kits must always be available as non-availability of these kits reduces the efficacy of the PMTCT programme.

5.6 Concluding remarks

The objective of this study was to identify and describe missed opportunities in the PMTCT programme in the sub-district of Mafikeng in the North West Province in South Africa. This objective has been achieved.

The literature study served to direct the development and implementation of the study. The major literature review was conducted at the beginning of the research process while a limited review was conducted during the finalisation of the research report to identify new studies.

The findings of the study identified the missed opportunities in the PMTCT programme. Conclusions that were reached are that there are missed opportunities at every step in the PMTCT programme. In the end, these missed opportunities render the efforts of preventing transmission of HIV from mother to child through the PMTCT programme ineffective.

Recommendations were made for nursing education, nursing research and midwifery practice.

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ANNEXURES

Annexure A North-West University (Potchefstroom Campus) Ethics Approval



NORTH-WEST UNIVERSITY
YUNIBESITHI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

Karin Minnie

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: (018) 299-4900
Faks: (018) 299-4910
Web: <http://www.nwu.ac.za>

Ethics Committee

Tel +27 18 299 4850
Fax +27 18 293 5329
Email Ethics@nwu.ac.za

2009-08-04

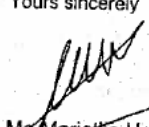
ETHICS APPROVAL OF PROJECT

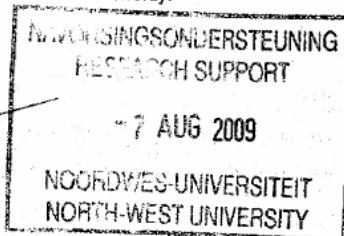
This is to certify that the next project was approved by the NWU Ethics Committee:

Project title Missed opportunities in the prevention of mother to child transmission of HIV in a sub-district of the North West Province, South Africa																																												
Student : M Sithole																																												
Ethics number:	<table border="1"><tr><td>N</td><td>W</td><td>U</td><td>-</td><td>0</td><td>0</td><td>0</td><td>3</td><td>8</td><td>-</td><td>0</td><td>9</td><td>-</td><td>A</td><td>1</td></tr><tr><td colspan="3">Institution</td><td colspan="6">Project Number</td><td colspan="2">Year</td><td colspan="2">Status</td></tr><tr><td colspan="15">Signs: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation</td></tr></table>	N	W	U	-	0	0	0	3	8	-	0	9	-	A	1	Institution			Project Number						Year		Status		Signs: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation														
N	W	U	-	0	0	0	3	8	-	0	9	-	A	1																														
Institution			Project Number						Year		Status																																	
Signs: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation																																												
Approval date: 3 August 2009	Expiry date: 2 August 2014																																											

The Ethics Committee would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the Ethics Committee for any further enquiries or requests for assistance. The formal certificates are in process and will follow shortly.

Yours sincerely


Me Mariette Halgryn
NWU Ethics Secretariate



Annexure B Request for permission North West Provincial Department of Health

MMabatho College of Nursing

P/Bag 2178

MAFIKENG

Tel:(w) 018 384 1123

Cell: 083 772 4073

14/08/2009

The Manager

Policy, Planning & Research

Department of Health

MMABATHO

2735

Dear Sir/Madam,

REQUEST FOR APPROVAL TO CONDUCT A STUDY IN THE FOLLOWING HEALTH CARE FACILITIES; MATERNITY UNITS: MAFIKENG PROVINCIAL HOSPITAL, UNIT 9 CLINIC, MONTSHIOA STADTS CLINIC, AND MONTSHIOA TOWN CLINIC.

I am a student at the North-West University (Potchefstroom Campus) and am currently registered for M.Cur Degree in Nursing Science.

I have been granted approval to undertake the project by the Ethics committee of the North-West University (Potchefstroom Campus) and this is the number for approval for undertaking the project (S: NWU – 00038 – 09 - A1).

My research topic is: Missed opportunities in the prevention of mother to child transmission of HIV.

The purpose of the research is to identify missed opportunities in the prevention of mother to child transmission of HIV infection so that a way can be found as to improve the implementation of PMTCT programme which in turn will lead to improved service delivery.

This study is comprised of auditing of the maternity patients' records of a particular month in 2010. Please find Attached, the proposal for the study.

Thanking you in anticipation.

Yours truly,

Miss P.M Sithole

Dr Karin Minnie

Prof. Christa vd Walt

M Cur Student

Supervisor

Co –Supervisor

Annexure C Request for Permission District Health Office

North West University

Private /Bag x 2046

Mafikeng Campus

MMABATHO

2735

Tel.0183892474 (w)

Cell. 837724073

02 March 2010

The Manager

District Health Office

NgakaModiriMolema

MAFIKENG

North West Province

2745

Sir/Madam,

REQUEST FOR PERMISSION FOR DATA COLLECTION AT THE FOLLOWING FACILITIES:
MATERNITY UNITS: MAFIKENG PROVINCIAL HOSPITAL, UNIT 9 CLINIC, MONTSHIOA
STADTS CLINIC, AND MONTSHIOA TOWN CLINIC.

I am a student at the North-West University (Potchefstroom Campus) and am currently registered for M.Cur Degree in Nursing Science.

I have been granted permission to undertake the research in the sub-district of Mafikeng in the NgakaModiriMolema District by the Department of Health in the North West Province. The

Ethics Committee of the North-West University (Potchefstroom Campus) have also granted approval to undertake the project (S: NWU – 00038 – 09 - A1).

My research topic is: Missed opportunities in the prevention of mother to child transmission of HIV.

The purpose of the research is to identify missed opportunities in the prevention of mother to child transmission of HIV infection so that a way can be found as to improve the implementation of PMTCT programme which in turn will lead to improved service delivery.

This study is comprised of auditing of the maternity patients' records of a January month 2010. I will need assistance from the facilities for access to the birth register and files of all patients delivered during January month. The relevant files will then be photocopied. All ethic principles (e.g. anonymising personal information) will be adhered to.

Dates and times for the data collection will be decided upon by the facility managers and the researcher.

Thanking you in anticipation.

Yours truly,

Miss P.M Sithole

Dr Karin Minnie

Prof. Christa vd Walt

M Cur Student

Supervisor

Co -Supervisor

AnnexureDRequest for Permission UNIT 9 Clinic

North West University

Private /Bag x 2046

Mafikeng Campus

MMABATHO

2735

Tel.0183892474 (w)

Cell. 837724073

08 March 2010

The Manager

UNIT 9 Clinic

MAFIKENG

North West Province

2745

Sir/Madam,

REQUEST FOR PERMISSION TO UNDERTAKE RESEARCH IN THE FOLLOWING FACILITIES - MATERNITY UNITS: MAFIKENG PROVINCIAL HOSPITAL, UNIT 9 CLINIC, MONTSHIOA STADTS CLINIC, AND MONTSHIOA TOWN CLINIC.

I am a student at the North-West University (Potchefstroom Campus) and am currently registered for M.Cur Degree in Nursing Science.

I have been granted permission to undertake the research in the sub-district of Mafikeng in the NgakaModiriMolema District by the Department of Health in the North West Province. The ethics committee of the North-West University (Potchefstroom Campus) have also granted approval to undertake the project.

My research topic is:

Missed opportunities in the prevention of the mother to child transmission of HIV.

The purpose of the research is to identify missed opportunities in the prevention of mother to child transmission of HIV infection so that a way can be found as to improve the implementation of PMTCT programme which in turn will lead to improved service delivery.

This study is comprised of auditing of the maternity patients' records of January 2010. This means all the files of January 2010 will be photocopied and assistance from the facility will be required in this regard.

Dates and times for actual data collection and interviews will be decided upon by the facility managers and the researcher.

Thanking you in anticipation.

Yours truly,

Miss P.M Sithole

M Cur Student

Dr Karin Minnie

Supervisor

Prof. Christa vd Walt

Co –Supervisor

AnnexureE Request for Permission Montshioa Town Clinic

North West University

Private /Bag x 2046

Mafikeng Campus

MMABATHO

2735

Tel.0183892474 (w)

Cell. 837724073

08 March 2010

The Manager

MONTSHIOA TOWN CLINIC

MAFIKENG

North West Province

2745

Sir/Madam,

REQUEST FOR PERMISSION TO UNDERTAKE RESEARCH IN THE FOLLOWING FACILITIES - MATERNITY UNITS: MAFIKENG PROVINCIAL HOSPITAL, UNIT 9 CLINIC, MONTSHIOA STADTS CLINIC, AND MONTSHIOA TOWN CLINIC.

I am a student at the North-West University (Potchefstroom Campus) and am currently registered for M.Cur Degree in Nursing Science.

I have been granted permission to undertake the research in the sub-district of Mafikeng in the NgakaModiriMolema District by the Department of Health in the North West Province. The ethics committee of the North-West University (Potchefstroom Campus) have also granted approval to undertake the project.

My research topic is:

Missed opportunities in the prevention of mother to child transmission of HIV.

The purpose of the research is to identify missed opportunities in the prevention of mother to child transmission of HIV infection so that a way can be found as to improve the implementation of PMTCT programme which in turn will lead to improved service delivery.

This study is comprised of auditing of the maternity patients' records of January 2010. This means all the files of January 2010 will be photocopied and assistance from the facility will be required in this regard.

Dates and times for actual data collection will be decided upon by the facility managers and the researcher.

Thanking you in anticipation.

Yours truly,

Miss P.M Sithole

M Cur Student

Dr Karin Minnie

Supervisor

Prof. Christa vd Walt

Co –Supervisor

AnnexureF Request for Permission MontshioaStadt Clinic

North West University

Private /Bag x 2046

Mafikeng Campus,

MMABATHO

2735

Tel.0183892474 (w)

Cell. 837724073

08 March 2010

The Manager

MONTSHIOA STADTS CLINIC

MAFIKENG

North West Province

2745

Sir/Madam,

REQUEST FOR PERMISSION TO UNDERTAKE RESEARCH IN THE FOLLOWING FACILITIES - MATERNITY UNITS: MAFIKENG PROVINCIAL HOSPITAL, UNIT 9 CLINIC, MONTSHIOA STADTS CLINIC, AND MONTSHIOA TOWN CLINIC.

I am a student at the North-West University (Potchefstroom Campus) and am currently registered for M.Cur Degree in Nursing Science.

I have been granted permission to undertake the research in the sub-district of Mafikeng in the NgakaModiriMolema District by the Department of Health in the North West Province. The ethics committee of the North-West University (Potchefstroom Campus) have also granted approval to undertake the project.

My research topic is:

Missed opportunities in the prevention of mother to child transmission of HIV.

The purpose of the research is to identify missed opportunities in the prevention of mother to child transmission of HIV infection so that a way can be found as to improve the implementation of PMTCT programme which in turn will lead to improved service delivery.

This study is comprised of auditing of the maternity patients' records of January 2010. This means all the files of January 2010 will be photocopied and assistance from the facility will be required in this regard.

The second phase will be interviewing the health care providers in those facilities.

Dates and times for actual data collection will be decided upon by the facility managers and the researcher.

Thanking you in anticipation.

Yours truly,

Miss P.M Sithole

M Cur Student

Dr Karin Minnie

Supervisor

Prof. Christa vd Walt

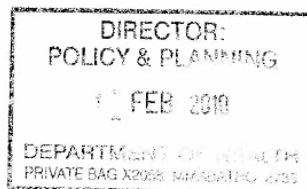
Co –Supervisor

Annexure G Permission from Department of Health



Health & Soc Dev

Department:
Health & Social Development
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



2ND Floor Tirelo Building
Dr. Albert Luthuli Drive
Mafikeng, 2745
Private Bag X2068
MMABATHO, 2735

DIRECTORATE POLICY, PLANNING AND RESEARCH

Tel: (018) 387 5757
Fax: 086 631 8540
smalakane@nwpg.gov.za

To : Ms. M.P. Sithole
North West University
From : Director: Policy, Planning & Research Directorate
Mr K.Rabanye
Date : 19 February 2010

Subject: Request for approval: Missed opportunities in the implementation of PMTCT of HIV North West Province.

The above stated subject matter has the following reference

This communiqué serves to inform your good self that permission to undertake a study as indicated above has been granted by the Office of the Superintendent –General of the Department of Health and Social Development.

Arrangements with managers at District level will be facilitated by the researcher. We apologize for any inconvenience caused.

Attached please find an agreement letter to be signed by you, an indication as to when the final results would be furnished to the Department is quiet crucial.

Yours truly

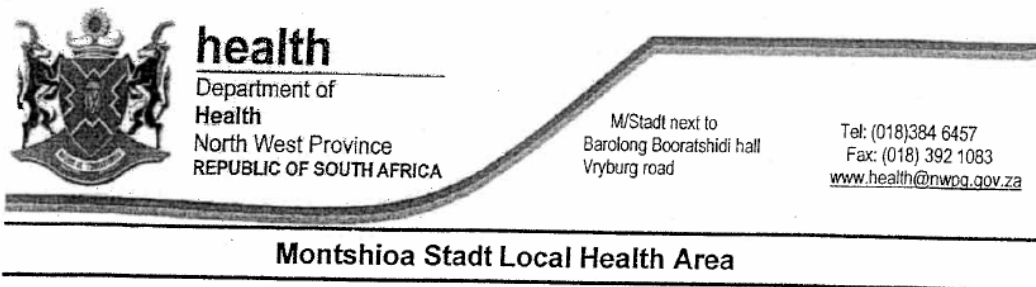
Mr K.Rabanye

Chairperson: PHRC –Health Branch

North West Department of Health and Social Development

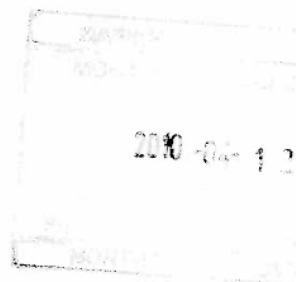
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Annexure H Permission from institution A



TO : Puledi Martha Sithole
North West University- Mafikeng Campus

FROM : The Manager
Montshioa Stadts clinic



DATE : 12/04/2010

SUBJECT: PERMISSION TO COLLECT DATA AT MONTSHIOA STADTS CLINIC

Dear Ms Sithole,

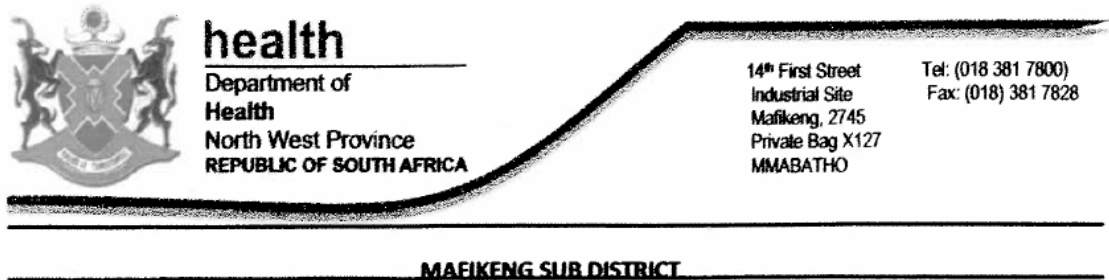
This serves to inform you that permission for collecting data was granted following the approval from the Mahikeng sub-district.

Regards,

Phatudi PNB₃ (018-3846457 / 0784480417)

The Manager (Montshioa Stadts Clinic)

Annexure I Permission from institution B



Montshioa Town Clinic

909 Kgabi street

Montshioa

2735

01-12 2011

To whom it may concern

Re-Data collection by Ms Sithole P.M

This serves to confirm that the above-named collected data in our facility in April 2010 following permission from Department of Health Mahikeng Sub-District.

Your corporation in this regard is highly appreciated.

M.L.Maruping R/N (operational manager PHC, Nursing)

M. L. Maruping 01/12/2011

Annexure J Permission from institution C

TO : Puledi Martha Sithole

North West University- Mafikeng Campus

FROM : The Manager

UNIT 9 CLINIC

DATE : 12/04/2010

SUBJECT: PERMISSION TO COLLECT DATA AT UNIT 9 CLINIC

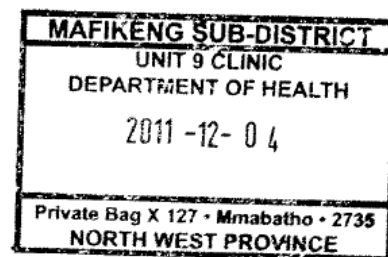
Dear Ms Sithole,

This serves to inform you that permission for collecting data was granted following the approval from the Mahikeng sub-district.

Regards,



The Manager (UNIT 9 Clinic)



AnnexureK Clinical Audit Form

CHECK LIST

Date of audit: _____ Name of the Evaluator: _____

Name of the Area: _____

Name of Health facility: _____

Maternity record Code no.: _____

Age of patient: _____

Gravity / Parity: _____

Gestational period at first antenatal visit: _____

Follow instructions on where to continue depending on answers.

ITEM	Yes	No	N.A.	Comments / Motivation if N.A
------	-----	----	------	------------------------------

Pregnancy				
1. Was the woman a known HIV positive patient before attending antenatal care?				
If YES, continue with question no. 11 If NO, continue with question no. 2				

2. Did she attend an antenatal clinic?				
If YES, continue with question no. 3				
If NO, continue with question no. 22				
3. On attending antenatal care, did she attend a group information session on HIV and its transmission?				
4. If she was not tested previously, did she attend an individual information session?				
5. During the individual information session, was she informed of the routine voluntary testing procedure and that she have the option of not accepting it?				
6. Did she agree to be tested?				
If NO, continue with question no. 7				
If YES, continue with question no. 9				
7. If she refused to be tested, was routine voluntary HIV testing offered at each subsequent clinic visit.				
8. Did she agree to be tested at a later visit?				
9. If the woman agreed to be tested, was the first rapid test positive?				
10. If tested negative, was she retested at around 34 weeks?				
11. Was the relevant post-test counselling done?				

If HIV negative, stop completing check list and analyse with other Negative – check lists				
If HIV positive, continue with question no. 12				
12. Was a confirmatory test done?				
13. Was the CD4 cell count done?				
14. Was a two weeks follow-up date given after the CD4 count test has been taken?				
15. Was she screened for TB and assessed according to the WHO clinical staging guideline?				
If her CD4 count was $\geq$ 200 cells/ml or WHO stage IV, answer question 16				
If her CD4 count was $\leq$ 200 cells/ml or staged at WHO stage IV disease, continue with question 17				
16. Did she received AZT (Zidovudine) 300mg 12 hourly from 28 weeks of gestation or asap thereafter?				
17. Was HAART initiated?				
18. Was prophylaxis with Cotrimoxazole commenced?				
19. Was she screened and treated for opportunistic infections?				
20. If she was on HAART before pregnancy, did she continue with the relevant regime?				
21. Did the mother receive information about the risk of HIV transmission through breast milk and the risks of replacement feeding during the post-test counselling and at every antenatal visit there after (at least 4 sessions)?				

Birth				
If her status was unknown on admission in clinic/hospital, continue with Question no. 22 If her status was known to be positive on admission in clinic/hospital, continue with question no. 25				
22. If admitted in first stage of labour, did she receive information about HIV, its transmission and voluntary testing during first sage?				
23. If admitted in second stage of labour, did she receive information about HIV, its transmission and voluntary testing after delivery?				
24. Did she agree to be tested?				
If her CD4 count was $\geq$ 200 cells/ml, answer question no. 25 and continue with question no 27 If her CD4 count was $\leq$ 200 cells/ml, continue with question no. 26 If she did not agree to be tested, continue with question no. 28				
25. Did she receive ARV's for PMTCT (single dose Nevirapine 200mg & AZT 300mg 3 hourly)?				
26. Did she continue with her relevant HAART regimen during labour?				
27. If her CD4 count was $\leq$ 200 cells/ml, - she had an elective or emergency caesarean section, - had signs of AIDS or severe immune deficiency or - the membranes been ruptured for longer than 4 hours, did she				

receive prophylactic antibiotics?				
28. Were the membranes ruptured for longer than 4 hours before delivery?				
29. Was the frequency of the vaginal examinations according to guidelines to limit risk of infection (4 hourly in latent phase & 2 hours in active phase)?				
30. Was vaginal swabbing with Chlorhexidine performed before each vaginal examination?				
31. In case of vaginal delivery, was an episiotomy performed?				
32. In case of assisted delivery, was HIV status considered in choice of method?				
33. In case of caesarean section, was antibiotics continued after birth up to completion of course at 5 days?				

Neonate				
34. If the neonate was suctioned directly after birth, was it indicated?				
35. If the mother is HIV positive and received optimal ARV's for PMTCT or HAART, did the neonate received single dose Nevirapine (within 72hrs) and AZT for 7 days?				
36. If the mother's status is unknown or HIV positive but did not received optimal ARV's for PMTCT or HAART, did the neonate received single dose Nevirapine (within 72hrs) and AZT for 28 days?				
37. If the mother is HIV positive, did she receive guidance on safe infant feeding using the AFASS criteria?				
38. Did health care personnel confirm the mother's infant feeding choice before the infant attached to her breast?				
39. Did the health care personnel ensure that the mother is aware of the risk of mixed feeding?				
40. If the mother selected exclusive breast feeding, did she receive information and support on the technique that facilitated exclusivity (correct attachment and positioning)?				
41. If the mother selected exclusive breast feeding, was she informed regarding heat treatment of breast milk to be used during periods of increased risk of MTCT?				
42. If the mother selected exclusive formula feeding, did she receive a demonstration and practice opportunity				

regarding preparation of commercial infant formula?				
43. If the mother selected exclusive formula feeding, have arrangements been made to ensure an uninterrupted supply of infant formula?				