



# **National Guidelines for the Prevention of Mother to Child Transmission of HIV**

**Government of Lesotho**

**September 2010**

## FOREWORD

Mother to Child Transmission (MTCT) of HIV is by far the main source of HIV infection in children. UNAIDS estimates that more than 90% of children acquire HIV through MTCT during pregnancy, labour, delivery and breast feeding. Since a significant proportion of HIV infected infants die in the first year of life, Prevention of Mother to Child Transmission (PMTCT) of HIV services provide an opportunity for securing Lesotho's posterity.

The high HIV prevalence among pregnant women in Lesotho (27.7%) indicates that if interventions are not scaled up, paediatric HIV infections will continue to reverse the gains made through child survival programmes. In light of this, the government of Lesotho through the MOHSW is committed to provide universal access to high quality, integrated PMTCT interventions. Such interventions should be provided in the context of comprehensive, fully-utilized quality Maternal and Child Health (MCH) and Sexual and Reproductive Health (SRH) services to ensure a reduction in maternal and childhood morbidity and mortality. It is for these reasons that the Ministry of Health and Social Welfare (MOHSW) developed the National Guidelines for Prevention of Mother to Child Transmission of HIV which promote a four pronged approach consisting of:

- Primary prevention of HIV infections among women of child-bearing age
- Prevention of unintended pregnancies among HIV infected women
- Prevention of HIV transmission from infected mothers to their children
- Provision of continuous care, treatment and support for infected mothers, their partners and children.

These guidelines incorporate the 2010 WHO PMTCT recommendations which reflect the most current and up to date evidence and place increased emphasis on improving the mother's health while at the same time providing maximum protection against HIV infection to her infant. For the first time since implementation of the PMTCT programme, HIV positive women can now safely breastfeed their infants without fear of transmitting the virus as ARV prophylaxis will be provided for the duration of the breastfeeding period.

The guidelines promote the integration of PMTCT services with maternal, newborn and child health services, provision of ART, family planning, STI and TB services and will equip service providers with the knowledge and skills required to provide consistently high-quality, client-sensitive services. Implementation of a PMTCT programme therefore involves the establishment of necessary linkages to other support programmes within the framework of a continuum of care for people infected and affected by HIV. It is my hope that these guidelines will help to strengthen such linkages in a bid to deliver high quality services to all mothers in the country.

This document has been mainly developed for use by health care providers and provides guidelines on how to implement integrated and comprehensive PMTCT services at health facilities.

Dr Mphu Ramatlapeng  
Minister of Health and Social Welfare  
Maseru, Lesotho

## **ACKNOWLEDGEMENTS**

The MOHSW wishes to acknowledge UNICEF for the financial support which it provided during the revision of the national PMTCT guidelines. The MOHSW would also like to extend its sincere gratitude to WHO for the technical support provided in the revision and final review of the Guidelines.

Revision of the PMTCT guidelines would not have been accomplished without the inputs of both Government and CHAL institution health personnel. The Ministry therefore acknowledges their contribution to the process.

The Ministry expresses sincere thanks to its PMTCT development partners for their technical inputs. These partners include but are not limited to: WHO, UNICEF, UNFPA, Baylor College of Medicine, EGPAF, ICAP, Clinton Foundation, MSF, PIH, Boston University and IYCN. The academic institutions which participated in the process are also acknowledged for their contribution.

Finally, the Ministry acknowledges the wide range of staff members within the Family Health Division, STI/HIV/AIDS Directorate and Disease Control who were committed to the process.

## LIST OF ACRONYMS

AIDS	:	Acquired Immune Deficiency Syndrome
AFB	:	Acid Fast Bacilli
ANC	:	Ante Natal Care
ART	:	Antiretroviral Therapy
AROM	:	Artificial Rupture of Membranes
ARV	:	Antiretroviral
AZT	:	Zidovudine
BCC	:	Behaviour Change Communication
BD	:	Twice a day
CBD	:	Community Based Distributors
CHW	:	Community Health Workers
DNA PCR	:	Deoxyribonucleic Acid – Polymerase Chain Reaction
EFV	:	Efavirenz
ECP	:	Emergency Contraception Pill
ECV	:	External Cephalic Version
ELISA	:	Enzyme Linked Immuno – Sorbent Assay
FBC	:	Full Blood Count
FHR	:	Foetal Heart Rate
FP	:	Family Planning
GA	:	Gestational Age
HTC	:	HIV Testing and Counselling
HAART	:	Highly Active Antiretroviral Therapy
HIV	:	Human Immunodeficiency Virus
IMCI	:	Integrated Management of Childhood Illness
NNRTI	:	Non – Nucleoside Reverse Transcriptase Inhibitor
MCH	:	Maternal and Child Health
MOHSW	:	Ministry of Health and Social Welfare
MTCT	:	Mother to Child Transmission
NVP	:	Nevirapine
LOR	:	Lesotho Obstetric Record
OCP	:	Oral Contraceptive Pill
PJP	:	Pneumocystis Jiroveci Pneumonia
PMTCT	:	Prevention of Mother to Child Transmission
PNC	:	Post Natal Care
PTB	:	Pulmonary Tuberculosis
RNA	:	Ribonucleic Acid
SD-NVP	:	Single Dose Nevirapine
STI	:	Sexually Transmitted Infection
TBA	:	Traditional Birth Attendant
TB	:	Tuberculosis
3TC	:	Lamivudine
UNAIDS	:	The joint United Nations Programme on HIV and AIDS
UNGASS	:	United Nations General Assembly Special Session
WHO	:	World Health Organization

# TABLE OF CONTENTS

<b>FOREWORD</b> .....	<b>I</b>
<b>ACKNOWLEDGEMENTS</b> .....	<b>II</b>
<b>LIST OF ACRONYMS</b> .....	<b>III</b>
<b>LIST OF ANNEXES</b> .....	<b>2</b>
<b>LIST OF FIGURES</b> .....	<b>2</b>
<b>CHAPTER ONE: INTRODUCTION AND BACKGROUND</b> .....	<b>4</b>
SECTION 1.1: HIV PREVALENCE ESTIMATES IN LESOTHO .....	4
SECTION 1.2: THE PMTCT PROGRAMME IN LESOTHO.....	5
SECTION 1.3: MOTHER TO CHILD TRANSMISSION OF HIV .....	5
SECTION 1.4: PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV (PMTCT) ...	8
<b>CHAPTER TWO: PREVENTION</b> .....	<b>9</b>
SECTION 2.1: PREVENTION OF HIV INFECTIONS AMONG WOMEN OF CHILD- BEARING AGE.....	9
SECTION 2.2: PREVENTION OF UNINTENDED PREGNANCIES AMONG HIV POSITIVE WOMEN .....	10
<b>CHAPTER THREE: HIV TESTING AND COUNSELLING</b> .....	<b>16</b>
SECTION 3.1: INTRODUCTION.....	16
SECTION 3.2: HIV TESTING AND COUNSELLING.....	16
SECTION 3.3: THE PRE-TEST SESSION.....	17
SECTION 3.4: HIV TESTS.....	18
SECTION 3.5: INTERPRETING TEST RESULTS .....	19
SECTION 3.6: POST-TEST COUNSELLING .....	20
SECTION 3.7: SUPPORT GROUPS.....	22
<b>CHAPTER FOUR: MANAGEMENT OF HIV INFECTED PREGNANT WOMEN</b> .....	<b>24</b>
SECTION 4.1: IDENTIFICATION OF HIV STATUS IN PREGNANCY .....	24
SECTION 4.2: ANTENATAL SERVICES .....	25
SECTION 4.3: INTRAPARTUM CARE .....	33
SECTION 4.4: POSTPARTUM CARE.....	36
SECTION 4.5: VILLAGE HEALTH WORKERS (VHWS) .....	39
SECTION 4.6: TB DIAGNOSIS AND TREATMENT OF PREGNANT AND BREASTFEEDING WOMEN.....	39
SECTION 4.7: HIV CARE AND TREATMENT FOR PREGNANT WOMEN.....	43
<b>CHAPTER FIVE: ANTIRETROVIRAL REGIMENS FOR PMTCT</b> .....	<b>45</b>
SECTION 5.1: ARV PROPHYLAXIS REGIMENS FOR PMTCT (CD4 > 350).....	45
SECTION 5.2: MOTHER-BABY PACK.....	47
SECTION 5.3: ASSESSMENT AND MONITORING OF WOMEN ON ARV PROPHYLAXIS .....	48
SECTION 5.4: ANTERETROVIRAL TREATMENT (ART) REGIMENS (CD4 ≤ 350) .....	50
SECTION 5.5: BASELINE ASSESSMENT FOR PREGNANT WOMEN ELIGIBLE FOR ART.....	51
SECTION 5.6: MONITORING PREGNANT WOMEN ON ART.....	52

<b>CHAPTER SIX: CARE OF THE EXPOSED INFANT</b> .....	<b>53</b>
SECTION 6.1: INTRODUCTION.....	53
SECTION 6.2: HIV TESTING AND COUNSELLING FOR INFANTS AND YOUNG CHILDREN.....	53
SECTION 6.3: ROUTINE CARE FOR EXPOSED INFANTS .....	54
SECTION 6.4: SPECIAL CARE FOR EXPOSED INFANTS .....	58

<b>CHAPTER SEVEN: INFANT FEEDING AND MATERNAL NUTRITION IN THE CONTEXT OF PMTCT</b> .....	<b>65</b>
SECTION 7.1: INTRODUCTION.....	65
SECTION 7.2: INFANT FEEDING FROM ZERO TO SIX MONTHS OF AGE.....	66
SECTION 7.3: INFANT FEEDING FROM SIX TO TWELVE MONTHS OF AGE.....	69
SECTION 7.4: INFANT FEEDING FROM TWELVE TO TWENTY-FOUR MONTHS OF AGE .....	69
SECTION 7.5: WHEN MOTHERS DECIDE TO STOP BREASTFEEDING.....	69
SECTION 7.6: INTERIM FEEDING STRATEGIES .....	70
SECTION 7.7: MATERNAL NUTRITIONAL SUPPORT .....	70

<b>CHAPTER EIGHT: MONITORING AND EVALUATION</b> .....	<b>73</b>
SECTION 8.1: DEFINITIONS .....	73
SECTION 8.2: RECORD KEEPING AND REPORTING.....	74
SECTION 8.3: INDICATORS FOR MONITORING AND EVALUATION OF THE PMTCT PROGRAM.....	75
SECTION 8.4: DATA FLOW .....	78
SECTION 8.5: QUALITY OF DATA.....	79
SECTION 8.6: SUPPLY CHAIN DATA .....	79

## **LIST OF ANNEXES**

<b>ANNEX 1: CONTRACEPTIVE METHODS IN THE CONTEXT OF HIV INFECTION</b> .....	<b>80</b>
<b>ANNEX 2: SUMMARY OF PACKAGE OF SERVICES FOR WOMEN AND CHILDREN DURING RECOMMENDED POST-NATAL VISITS</b> .....	<b>82</b>
<b>ANNEX 3: WHO CLINICAL STAGING OF HIV DISEASE IN ADULTS AND ADOLESCENTS</b> .....	<b>85</b>
<b>ANNEX 4: SUMMARY OF ARV PROPHYLAXIS REGIMENS FOR MOTHERS (CD4 &gt; 350) AND INFANTS FOR PMTCT</b> .....	<b>86</b>
<b>ANNEX 5: WHO PAEDIATRIC CLINICAL STAGING</b> .....	<b>87</b>
<b>ANNEX 6: INFANT FEEDING ASSESSMENT AND COUNSELLING</b> .....	<b>88</b>
<b>ANNEX 7: MINIMUM PMTCT INDICATORS FOR NATIONAL PROGRAMME MONITORING AND EVALUATION</b> .....	<b>89</b>

## **LIST OF FIGURES**

<b>FIGURE 1: ANC HIV PREVALENCE BY YEAR</b> .....	<b>4</b>
<b>FIGURE 2: ANC PREVALENCE BY AGE GROUP: 2005, 2007, AND 2009</b> .....	<b>5</b>
<b>FIGURE 3: OUTCOMES OF INFANTS BORN TO HIV POSITIVE MOTHERS WITHOUT ANY INTERVENTION</b> .....	<b>7</b>
<b>FIGURE 4: FLOW CHART OF PMTCT SERVICES</b> .....	<b>23</b>

<b>FIGURE 5: EXAMPLE OF THE NEW INFORMATION INCLUDED IN THE LESOTHO OBSTETRIC RECORD (LOR)</b> .....	25
<b>FIGURE 6: ARV PROPHYLAXIS</b> .....	28
<b>FIGURE 7: BASELINE HAEMOGLOBIN SCREENING AND MONITORING OF WOMEN ON AZT-BASED PROPHYLAXIS</b> .....	49
<b>FIGURE 8: HIV DIAGNOSIS: 0-9 MONTHS OF AGE</b> .....	62
<b>FIGURE 9: HIV DIAGNOSIS: 10-18 MONTHS OF AGE</b> .....	63
<b>FIGURE 10: HIV DIAGNOSIS: &gt; 18 MONTHS OF AGE</b> .....	64

## **LIST OF TABLES**

<b>TABLE 1: FACTORS WHICH MAY INCREASE THE RISK OF HIV TRANSMISSION</b> -----	6
<b>TABLE 2: FOUR ELEMENTS OF A COMPREHENSIVE APPROACH TO PMTCT</b> -----	8
<b>TABLE 3: CONTRACEPTIVE OPTIONS FOR BREASTFEEDING AND NON-BREASTFEEDING MOTHERS</b> ----	14
<b>TABLE 4: SUMMARY OF SERVICES TO BE PROVIDED AT SUBSEQUENT ANC VISITS</b> -----	31
<b>TABLE 5: CARE FOR THE MOTHER AND INFANT WITHIN 6 HOURS OF DELIVERY</b> -----	36
<b>TABLE 6: CO-TRIMOXAZOLE (CTX) PROPHYLAXIS IN ADULTS AND ADOLESCENTS</b> -----	43
<b>TABLE 7: REGIMEN CHOICE (ART VS. ANTIRETROVIRAL PROPHYLAXIS) AND MONITORING DURING PREGNANCY AND BREASTFEEDING</b> -----	44
<b>TABLE 8: INFANT DOSING OF NEVIRAPINE SYRUP</b> -----	46
<b>TABLE 9: RECOMMENDED ART REGIMENS FOR MOTHERS AND ARV PROPHYLAXIS REGIMENS FOR THEIR INFANTS</b> -----	50
<b>TABLE 10: SCHEDULE OF MONITORING VISITS FOR HIV EXPOSED INFANTS</b> -----	56
<b>TABLE 11: RECOMMENDED DOSES OF CO-TRIMOXAZOLE PROPHYLAXIS FOR INFANTS AND YOUNG CHILDREN</b> -----	58
<b>TABLE 12: RECOMMENDED DOSE OF NVP PROPHYLAXIS FOR EXPOSED INFANTS</b> -----	58
<b>TABLE 13: PRESUMPTIVE CLINICAL DIAGNOSIS OF SEVERE (STAGE 4) HIV DISEASE</b> -----	59
<b>TABLE 14: DEVELOPMENTAL MILESTONES IN CHILDREN</b> -----	60
<b>TABLE 15: DEVELOPMENTAL RED FLAGS</b> -----	61
<b>TABLE 16: LIST OF MACRONUTRIENTS</b> -----	71
<b>TABLE 17: LIST OF MICRONUTRIENTS</b> -----	72

# CHAPTER ONE: INTRODUCTION AND BACKGROUND

## SECTION 1.1: HIV PREVALENCE ESTIMATES IN LESOTHO

### Section 1.1.1: General population

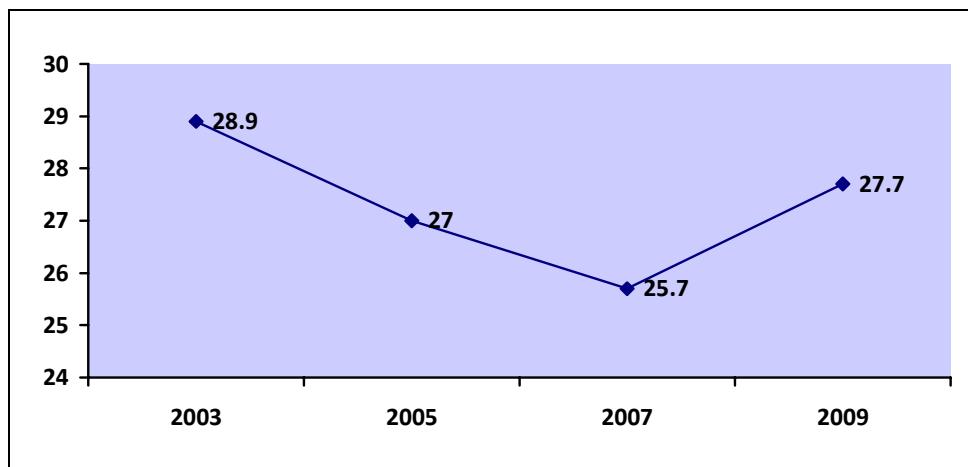
Lesotho's overall HIV prevalence is among the highest in the world at 23.7%, with a mean HIV prevalence among pregnant women of 27.7%. Out of 1.89 million people, approximately 270,000 are infected with HIV, including approximately 12,000 children. It is estimated that there are 55,000 annual births in the country, out of which approximately 15,235 infants are born to HIV infected women each year. In the absence of any intervention to prevent vertical transmission of HIV, this would result in approximately 6,094 new paediatric HIV infections per year.

In 1998, the adult HIV prevalence was estimated at 9.8% (Disease Control Unit, Ministry of Health, Lesotho). In contrast, when the 2004 Demographic Health Survey was conducted, the adult HIV prevalence was estimated at 23.5%. This suggests that the trend of HIV infection increased at an alarming rate during this period.

### Section 1.1.2: HIV Prevalence among ANC attendees

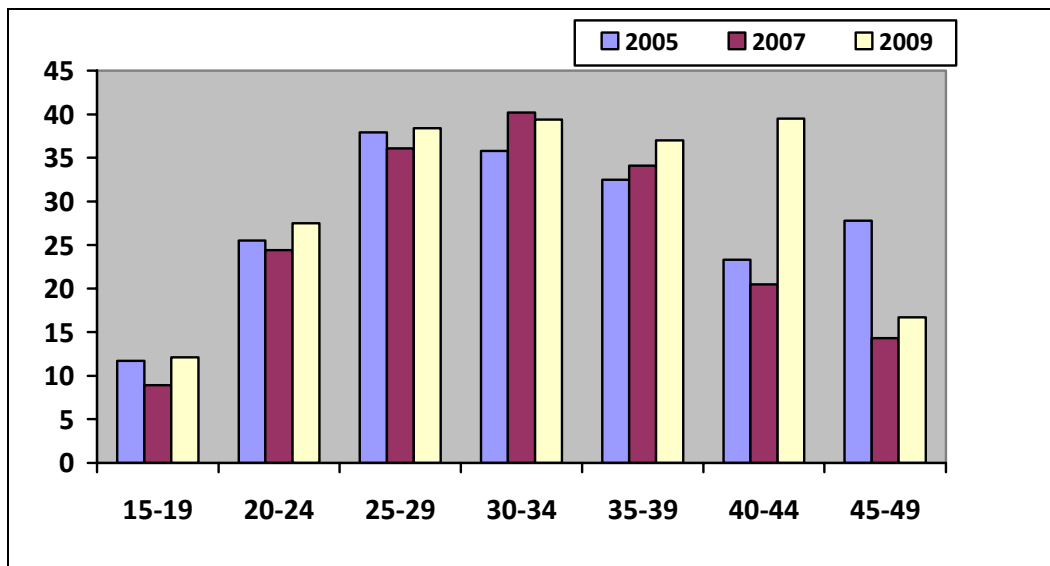
Trends of HIV prevalence among ANC attendees show a stable epidemic, though at high levels. As shown in Figure 1, mean prevalence among ANC attendees has increased since 2007 (from 25.7% to 27.7%), though median prevalence has decreased slightly (2009 Lesotho Sentinel HIV/Syphilis Survey). As indicated in Figure 2, HIV prevalence is over 30% in ANC attendees aged 25-39 years, with the highest prevalence among 30-34 year-old women (2009 Lesotho Sentinel HIV/Syphilis Survey). These figures highlight the urgent need for scale-up of effective interventions to prevent mother to child transmission of HIV in Lesotho.

**Figure 1: Mean ANC HIV prevalence by year**





**Figure 2: ANC prevalence by age group: 2005, 2007, and 2009**



## **SECTION 1.2: THE PMTCT PROGRAMME IN LESOTHO**

PMTCT serves as an entry point for prevention of HIV infection and continuous follow-up and care of HIV infected women, exposed infants, and infected children and families. PMTCT services were officially launched in Lesotho in February 2003. At present there are 186 PMTCT sites including 23 adolescent health corners throughout the country. This reflects an increase in program coverage from 16% in 2006 to 71% in 2009, which was made possible by expanded training of health care providers, adoption of the provider-initiated testing approach, involvement of partners at implementation sites, and decentralization of PMTCT services to health centre level. PMTCT services at all levels are integrated into ANC and other MCH services.

Despite the progress made in the implementation of PMTCT services, there is still room for improvement in the number of exposed infants and children, HIV infected pregnant women and HIV infected breast feeding women accessing care and treatment. In addition, men do not often come forward to test for HIV, and thus often miss the opportunity to make informed decisions regarding their own health and that of their families. Given the HIV prevalence of 27.7% among ANC attendees, the Ministry of Health and Social Welfare intends to invest appropriate and adequate financial and technical resources for implementing PMTCT interventions within a framework of complementary and synergistic national HIV and AIDS plans.

## **SECTION 1.3: MOTHER TO CHILD TRANSMISSION OF HIV**

MTCT of HIV is a major problem in Sub-Saharan Africa and urgently needs to be addressed. According to UNAIDS estimates, more than 75% of all women of reproductive age living with HIV and AIDS are found in this region of the world. In 2008 alone, 430 000 children under the age of 15 years were infected with HIV worldwide, virtually all of them through MTCT. About 90% of these infections

occurred in Sub-Saharan Africa due to a combination of high prevalence among pregnant women, high fertility rates, and ineffective and limited interventions to prevent MTCT.

Studies have shown that MTCT may occur during pregnancy, labour and delivery, or breastfeeding, with the largest number occurring during labour and delivery. However, it should be noted that the contribution of each of these routes to the overall risk of transmission has been difficult to accurately quantify for various reasons, including differences in study design and availability of early diagnosis of paediatric infection.

**Risk factors for transmission**

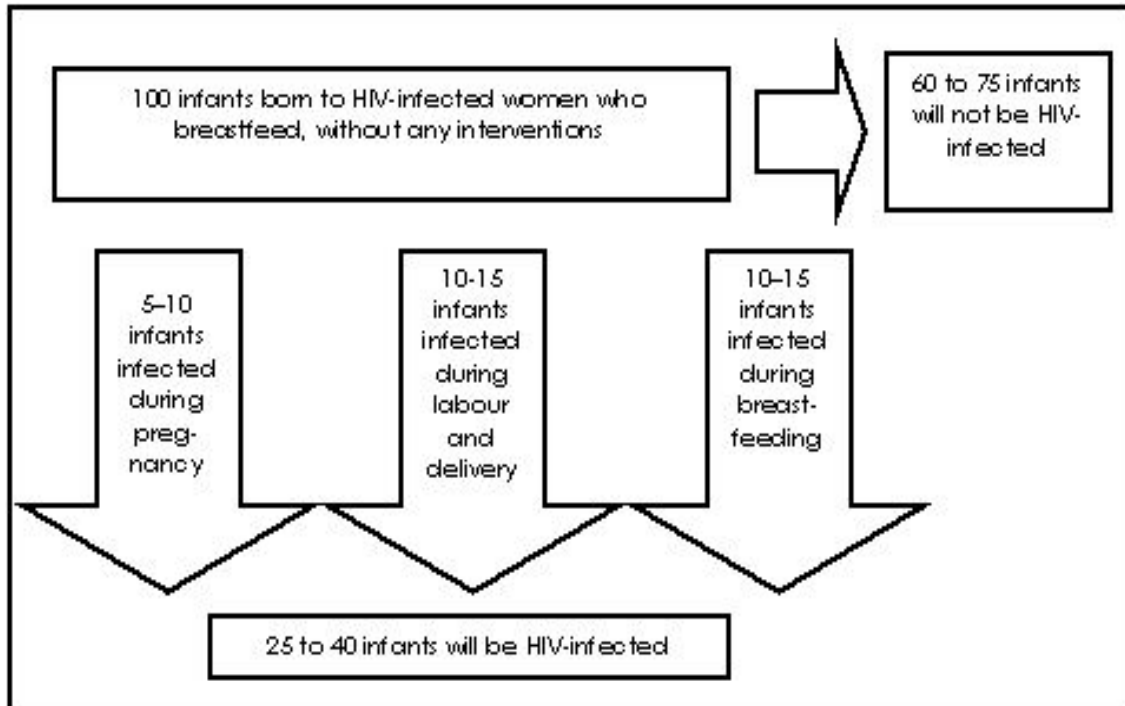
Viral, maternal, obstetric, foetal, and infant factors all influence the risk of MTCT. The most important risk factor for MTCT is the amount of the virus in the mother's blood, known as the viral load. The risk of transmission to the infant is greatest when the viral load is high, which is often the case with recent HIV infection or advanced AIDS. Risk factors for transmission of HIV are summarized in Table 1.

**Table 1: Factors which may increase the risk of HIV transmission**

<b>Factors which may increase the risk of HIV transmission</b>		
<p><b>Pregnancy</b></p> <ul style="list-style-type: none"> <li>• High maternal viral load (new infection or advanced AIDS)</li> <li>• Sexually Transmitted Infections (STIs)</li> <li>• Viral, bacterial, or parasitic placental infection</li> <li>• Poor maternal nutritional status</li> <li>• Chorioamnionitis (from an untreated STI or other infection)</li> </ul>	<p><b>Labour and Delivery</b></p> <ul style="list-style-type: none"> <li>• High maternal viral load (new infection or advanced AIDS)</li> <li>• Rupture of membranes for more than 4 hours</li> <li>• Invasive delivery procedures that increase contact with mother's infected blood or body fluids (e.g. episiotomy, foetal scalp monitoring)</li> <li>• First infant in multiple birth</li> <li>• Preterm delivery</li> <li>• Low birth weight</li> </ul>	<p><b>Breastfeeding</b></p> <ul style="list-style-type: none"> <li>• High maternal viral load (new infection or advanced AIDS)</li> <li>• Prolonged breastfeeding</li> <li>• Mixed feeding, particularly during the first 6 months of life (e.g. food or fluids in addition to breast milk)</li> <li>• Breast abscesses, nipple fissures, mastitis</li> <li>• Poor maternal nutritional status</li> <li>• Oral disease in the baby (e.g. oral thrush or sores)</li> </ul>

Figure 3 shows the rate of MTCT in the absence of any intervention: among 100 infants born to HIV positive women, 5-10% will be infected during pregnancy, 10-15% will be infected during labour and delivery, and 10-15% will be infected during breastfeeding. Thus out of 100 infants born to infected women, 25-40 infants will be infected during pregnancy, delivery, or breastfeeding.

**Figure 3: Outcomes of infants born to HIV positive mothers without any intervention**



As the greatest numbers of infants are infected during labour and delivery, efforts should be made to ensure that PMTCT services are provided efficiently during pregnancy and through the continuum of care into labour and delivery. It is also important that safe obstetrical practices are adopted in each facility providing labour and delivery services. PMTCT is a very effective way to reduce the risk of infection in children and health care providers should ensure that each intervention known to minimize MTCT is offered to all HIV infected women.

## SECTION 1.4: PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV (PMTCT)

PMTCT involves a comprehensive approach consisting of four components that must all be implemented in order to optimise the effectiveness of the programme.

The comprehensive approach includes the four components listed in Table 2 below.

**Table 2: Four components of a comprehensive approach to PMTCT**

Component	Target population	Additional information
<b>1:</b> Primary prevention of HIV infection	Women and men who are sexually active	This aims to prevent men and women from ever contracting HIV. If new HIV infections are prevented, fewer women will have HIV and fewer infants will be exposed to HIV.
<b>2:</b> Prevention of unintended pregnancies among women infected with HIV	HIV infected women	This addresses the long term family planning and contraceptive needs of women with HIV. If women who are infected with HIV do not have unintended pregnancies there will be fewer infants exposed to HIV.
<b>3:</b> Prevention of HIV transmission from women infected with HIV to their infants	HIV infected women	This focuses on: <ul style="list-style-type: none"> <li>• Access to HIV testing and counselling during ANC, labour and delivery, and the postpartum period</li> <li>• Provision of ARV drugs to mother and infant</li> <li>• Safer delivery practices to decrease the risk of infant exposure to HIV</li> <li>• Infant feeding information, counselling and support for safer practices</li> </ul>
<b>4:</b> Provision of treatment, care and support to women infected with HIV, their infants and their families	HIV infected women, their children and families	This addresses the treatment, care and support needs of HIV-infected women, their children and families.

*(WHO and CDC. Prevention of mother-to-child transmission of HIV Generic Training Package, Draft. January 2008.)*

Prevention of HIV infection in women (Component 1) and prevention of unintended pregnancies (Component 2) are the most effective ways of reducing the number of infants infected with HIV and together could decrease the proportion of infants infected by 35% to 45% in many countries. The third component of PMTCT alone would reduce HIV infection in children by 2-12%. It is therefore essential that all four components are implemented together if the goal of reducing the numbers of infants infected with HIV by 80% by 2015 is to be achieved (*WHO and CDC. Prevention of mother-to-child transmission of HIV Generic Training Package, Draft. January 2008*).

## CHAPTER TWO: PREVENTION

### SECTION 2.1: PREVENTION OF HIV INFECTIONS AMONG WOMEN OF CHILD-BEARING AGE

Decreasing the number of newly infected women is the most effective way to reduce MTCT. HIV infection will not be transmitted to children if future parents are not infected with HIV. This can be achieved through some of the following measures:

#### Section 2.1.1: Promoting safe and responsible sexual behaviour

Safe and responsible sexual behaviour and practices include delaying the onset of sexual activity, practising abstinence, reducing the number of sexual partners, seeking prompt and effective treatment for STIs, and using contraceptives plus condoms. These practices can reduce the number of new infections among women of reproductive age. It is particularly important that **pregnant** women practice safer sex as they are at a higher risk of acquiring HIV than non-pregnant women (probably due to hormonal changes affecting the lining of the genital tract or to immune responses).

Behaviour change communication (BCC) efforts for PMTCT aim to change the behaviours that place mothers and children at risk of becoming HIV-infected or spreading HIV infection. BCC recognises that behaviour change is not simply a matter of increasing knowledge; many factors can influence changes in behaviour — such as one's family, church, and community. BCC for PMTCT attempts to create conducive environments within households, communities, and health facilities in which individuals can modify their behaviour to decrease the risk of HIV infection.

#### Section 2.1.2: Providing free and universal access to condoms

Condoms help prevent HIV transmission when used correctly and consistently. Clients should be provided with information on how to use condoms and be given the skills to negotiate for safer sex with their partners. Programmes that promote condom use for HIV prevention should also strengthen condom use in pregnancy because women who are HIV negative in early pregnancy are more likely to pass HIV to their babies if they seroconvert during pregnancy. This strategy also calls for male involvement in PMTCT services.

#### Section 2.1.3: Providing early diagnosis and treatment of STIs

Infection with sexually transmitted infections (STIs) predisposes to higher risk of HIV infection. Early diagnosis and treatment of STIs will therefore reduce the incidence of HIV in the general population. STI treatment services present an opportunity to provide HIV testing, information, and referral for PMTCT services. Furthermore, STIs such as syphilis, chlamydia, gonorrhoea, herpes genitalis, HPV, etc. can be detrimental for both the mother and her baby. It is therefore critical to use condoms during sex and seek early treatment for STIs (refer to National STI guidelines for further information).

#### Section 2.1.4: Making HIV testing and counselling routine for all ANC attendees

HIV testing and counselling services should be routine for all women of childbearing age and for all ANC attendees, since PMTCT interventions depend on a woman knowing her HIV status. Furthermore, there should be no requirement for signing a consent form for HIV testing in MCH settings.

#### Section 2.1.5: Providing suitable counselling for women who are HIV negative

Counselling provides an opportunity for a woman who is HIV negative to learn how to protect herself and her infant from HIV infection. It can also serve as powerful motivation to adopt safer sex practices, encourage partner testing, and discuss family planning.

### **SECTION 2.2: PREVENTION OF UNINTENDED PREGNANCIES AMONG HIV POSITIVE WOMEN**

Unintended pregnancy is avoidable and effective family planning is important to help women prevent unintended pregnancies and promote appropriate birth spacing. Family planning (FP) can also help women who are HIV infected protect their own health while taking care of their families and communities. The World Health Organization (WHO) recommends that by week 32 of gestation, clients should be encouraged to discuss birth spacing and contraceptive options with their partners, and be able to have access to their contraceptive method of choice (UNAIDS, 2002).

Family planning allows HIV positive men and women to better plan their reproductive lives and choose if and when to conceive. Links between HIV testing programmes and FP services must therefore be strengthened in order for HIV infected women and their partners to make informed choices regarding their future reproductive lives. ART clinics should provide information, counselling, and family planning commodities, including condoms, and refer clients to FP clinics for comprehensive services if unavailable on site.

Health facilities should:

- Provide safe and effective contraception for all women
- Promote contraceptive methods controlled by women
- Promote FP use and encourage dual method use (use of condoms in addition to the contraceptive method of choice)
- Provide high quality reproductive health counselling to contribute to informed decision making about pregnancy choices

Increasing access to family planning services for women with HIV and effective use of contraceptives play an important role in the multi-pronged approach to PMTCT by preventing unintended pregnancies among women who are infected with HIV, thus decreasing the likelihood of HIV infection in children.

Although HIV infected women should be free to make these reproductive choices for themselves just like other women and couples, being HIV positive may make them more vulnerable to societal, religious, or family pressures than women who are not

infected. Counsellors should acknowledge these pressures and identify women who need psychosocial support to ensure that they do not feel coerced or pressured into making certain reproductive health choices.

### Section 2.2.1: Issues to be covered in FP Counselling

To assist women who are HIV infected in making decisions about childbearing, they require information and counselling on:

- Effective contraceptive methods to prevent pregnancy, if so desired, including potential drug interactions of ARVs with hormonal contraceptives
- Interactions between HIV and pregnancy
- The safety of ARVs during pregnancy
- The risk of birth defects should women become pregnant while receiving certain drugs; some ARVs, such as Efavirenz (EFV), have harmful effects on the foetus and should not be offered to women who may become pregnant while on ARVs
- The risk of transmission of HIV to their infants and the effectiveness of antiretroviral prophylaxis or treatment in reducing transmission

### Section 2.2.2: Importance of starting FP counselling in the antenatal period

Counselling on family planning should be started in the antenatal period for the following reasons:

- A woman who is HIV positive needs to understand the risks for herself and her child if she has other children – both the health risks and the risks of transmitting HIV.
- By providing women with information about family planning options during antenatal care, the woman will have time to consider her options, talk about these options with her partner and family or friends, and make an informed decision about her choice when she gives birth.
- A woman who has made a decision about a family planning choice before giving birth will be prepared to use the chosen method in the postpartum period to prevent herself from becoming pregnant again.
- Women should know that they can become pregnant as soon as 4 weeks after delivery if they have sex and are not exclusively breastfeeding. Therefore it is important to start thinking early about what family planning method they will use.
- Information on when to start a method of family planning after delivery will vary depending on whether a woman is breastfeeding or not. Her partner can decide to have a vasectomy (male sterilization) at any time.

### Section 2.2.3: Factors affecting choice of contraceptive method:

The choice of contraceptive method should depend on:

- Appropriateness for short-term, long-term, or permanent use
- Possible side effects in women with HIV
- Ease of use
- Affordability and availability
- The effects on breastfeeding (if any)

Other factors which may affect contraceptive choice include:

- How it may interact with other medications, including ARVs
- Whether it provides protection from HIV/STI transmission and acquisition
- Whether partner involvement or negotiation are required

#### Section 2.2.4: Contraceptive options

Contraceptive options for women with HIV are similar to those for uninfected women and include barrier methods, hormonal methods, intra-uterine devices, female and male sterilization, and the lactation amenorrhoea method (refer to Annex 1). Women with HIV who decide to prevent or delay pregnancy can safely use most methods of contraception; however, health care providers should be familiar with the potential drug-drug interactions that could occur with use of ARV drugs and hormonal contraceptives.

Family Planning methods that can be used by women with HIV include:

- **Condoms** – These provide dual protection (prevention of pregnancy and of most STIs and HIV). HIV infected women need continuing protection against STIs. It is particularly important that **pregnant** women practise safer sex, due to their higher risk of acquiring HIV. If the woman thinks that her partner will not use condoms, she may wish to use an additional method for pregnancy prevention.
- **Hormonal contraceptives** - includes combined oral contraceptive pills and injectable methods (such as Depo-Provera/DMPA). These are highly effective birth control methods, but:
  - Health care workers prescribing hormonal contraceptives for their HIV-infected patients on ARV therapy should counsel women about possible interactions between hormonal contraceptives and certain ARV drugs. Clients should understand that the clinical significance of these interactions is unclear but that using a back-up method like a condom is recommended to avoid unintended pregnancy.
  - Progesterone-only injectable methods can normally be given up to 2 weeks late; however HIV infected women on ARVs should be advised to receive follow-up injections 2 weeks early: *10 weeks for Depo-Provera and 6 weeks for Nuristerate.*
  - Women taking rifampicin for tuberculosis usually need to use a back-up method of contraception such as condoms while taking rifampicin, as it can lower the efficacy of some hormonal contraceptives (pills, injectables or implants).
- **Intrauterine devices (IUDs)** – These can be used successfully in HIV-infected women on ARV therapy who are clinically well and in asymptomatic or mildly symptomatic women.



- **Lactation amenorrhea method (LAM)** - A temporary contraceptive method suitable for women who (i) are less than 6 months postpartum, (ii) are exclusively breastfeeding, and (iii) have not resumed menstruating. If all three of these criteria are met, women will have only a 1% to 2% chance of getting pregnant while using this method. Women using this family planning method should be assisted to choose another method as soon as possible as LAM is a temporary method.
- **Surgical contraception:** this is a permanent method of birth control and an excellent option for women and men who do not desire any more children. Surgical contraception is not contraindicated in women and men with HIV infection, nor is HIV an indication for permanent contraception.
- **Emergency contraception (EC)** prevents pregnancy after unprotected intercourse and providers should advise women with HIV about EC. Providers can also give EC to women who are not using a regular method of contraception to take home and to use in case the need arises. EC can also be used under the following situations: condom breaks or slips; a woman using oral contraception starts her pack 3 or more days late or forgets 3 or more pills in the first week; or if an IUD is expelled. EC does not protect against STIs and HIV infection.

#### Section 2.2.5: Family planning methods that are not recommended for women with HIV

- **Spermicides, or diaphragm with spermicides** (foams, gels, creams or suppositories/tablets that contain chemicals that immobilize or destroy sperm and reduce the risk of pregnancy) should not be used by HIV infected women due to enhanced risk of HIV transmission.
- **Fertility awareness-based methods** are difficult to use and unreliable in women with AIDS or on ARV therapy, due to changes in menstrual cycle and higher body temperatures.

#### Section 2.2.6: Dual Method Use

**Condoms plus another contraceptive method must be used concurrently.** Dual protection is an effective way to prevent both unintended pregnancy and STIs, including HIV. However, studies have suggested that women with HIV who use more effective contraceptive methods are less likely to use condoms, even with an uninfected partner. These study results reinforce the importance of providers helping clients to understand the benefits of dual protection by considering the following:

- The limitations of a single-method approach
- The client's individual risk of pregnancy
- Whether their partners have HIV or another STI, and

- The negative consequences of acquiring or transmitting HIV, especially as resistant strains of the virus emerge

Clients who use only one method of contraception must understand the limitations of the various methods to prevent pregnancy and to prevent transmission of the virus. Methods that are more effective than condoms for pregnancy prevention offer no STI/HIV protection. Use of condoms is the only method that provides protection from HIV and other STIs; however, with typical use, they are less effective at preventing pregnancy than other modern contraceptive methods. For these reasons, providers should offer counselling to encourage correct and consistent use of condoms.

Abstinence from sexual intercourse may be the most sensible option for some individuals, particularly younger adolescents. Delay of sexual debut has been shown to decrease the risk of HIV infection among adolescents.

#### Section 2.2.7: When to start the chosen FP method after childbirth

In addition, women should know the earliest time that they can start a family planning method after childbirth for the following reasons:

- For maximum protection, a woman should not wait until the return of monthly bleeding to start a contraceptive method, but instead she should start as soon as guidance allows.
- A woman who is not or not fully breastfeeding is able to become pregnant as soon as 4 to 6 weeks after childbirth.
- A woman who is fully or nearly fully breastfeeding is able to become pregnant as soon as 6 months postpartum.

#### Section 2.2.8: Contraceptive options for breastfeeding and non-breastfeeding HIV positive women irrespective of whether on ART or not

**Table 3: Contraceptive options for breastfeeding and non-breastfeeding mothers**

<b>When to start</b>	<b>Family planning method</b>
<b>Non-breastfeeding woman</b>	
Can be used immediately postpartum	<ul style="list-style-type: none"> <li>• Condoms</li> <li>• Progestogen-only oral contraceptives</li> <li>• Progestogen-only injectables</li> <li>• Implant</li> <li>• Female sterilization (within 7 days or delay 6 weeks)</li> <li>• Copper IUD (immediately following expulsion of placenta or within 48 hours)</li> </ul>
Delay 3 weeks	<ul style="list-style-type: none"> <li>• Combined oral contraceptives</li> <li>• Combined injectables</li> </ul>

**Breastfeeding woman**

Can be used immediately postpartum	<ul style="list-style-type: none"><li>• Lactation amenorrhoea method (LAM)</li><li>• Condoms</li><li>• Female sterilisation (within 7 days or delay 6 weeks)</li><li>• Copper IUD (within 48 hours or delay 4 weeks)</li></ul>
Delay 6 weeks	<ul style="list-style-type: none"><li>• Progestogen-only oral contraceptives</li><li>• Progestogen-only injectables</li><li>• Implants</li></ul>
Delay 6 months	<ul style="list-style-type: none"><li>• Combined oral contraceptives</li><li>• Combined injectables</li></ul>

## **CHAPTER THREE: HIV TESTING AND COUNSELLING**

### **SECTION 3.1: INTRODUCTION**

Counselling is defined as a confidential dialogue between a counsellor and a client aimed at helping the client cope with a difficult situation through informed decision making. In HIV and AIDS, counselling is aimed at assisting the client to learn their HIV status and to cope with the outcome in constructive ways.

### **SECTION 3.2: HIV TESTING AND COUNSELLING**

Pregnancy usually presents an opportunity to engage women in health care. Highly motivated by the desire to have healthy children, many women are willing to access the formal health care system for antenatal services. The introduction of HIV Testing and Counselling (HTC) as an integral part of antenatal services will enable many women to learn their status.

#### Section 3.2.1: Benefits of routine HTC in MCH services

PMTCT services integrated within MCH services benefit both clients and the health system by:

- Reducing stigma associated with both HTC and HIV infection
- Reaching pregnant women and clients in the context of family planning, postnatal care and under-five services
- Ensuring continuous care and psychosocial support for HIV positive mothers in ANC, including those who decline to test for HIV at the initial contact in PMTCT settings
- Identifying HIV positive women and affected family members so they can access care, treatment, and support
- Reinforcing safer sexual practices to prevent the spread and/or contracting of HIV
- Enabling HIV positive clients to access care, treatment, and support early

#### Section 3.2.2: HIV Testing and Counselling for pregnant and lactating mothers

- ANC attendees should:
  - Be informed that an HIV test is performed routinely for all clients
  - Receive HIV information including the availability and benefits of PMTCT services
  - Be tested unless they explicitly decline (or “opt out”)
- Routine testing for HIV at ANC does not require written informed consent; verbal consent is adequate
- Women who are not tested in ANC should be tested in other settings, including:
  - Labour and Delivery
  - Postnatal care clinics
  - Family planning and STI facilities

### Section 3.2.3: Re-testing for women who initially tested HIV negative

Women who test negative during ANC should be re-tested at the following times:

- At 36 weeks gestation if the previous test was done more than 6 weeks earlier
- During labour or as soon as possible post delivery for those who did not retest as indicated above

### Section 3.2.4: Counselling and testing for pregnant adolescents

Pregnant minors (mature minors) should be able to make their own decisions about HIV testing and benefit from interventions to prevent MTCT. Although national HTC policy indicates that minors may only consent to HIV testing from the age of 12 years, pregnant minors may consent to HIV testing at any age. All efforts should be made to engage adult members of the family in providing continued support for HIV positive pregnant minors. However, the consent of the pregnant adolescent alone is enough to proceed with the HIV test.

### Section 3.2.5: Counselling and testing for infants and young children

Infants and young children represent a particularly vulnerable group, due to the risk of rapid progression of HIV disease. Special considerations apply to counselling and testing for HIV in this population. Please refer to Chapter 6 (Care of the Exposed Infant) for further information.

## **SECTION 3.3: THE PRE-TEST SESSION**

Since HIV testing should be offered to **all women** seeking care in ANC or MCH settings, pre-test education/information should ideally be provided in a group session. All women should receive pre-test information about HIV and PMTCT to help them make an informed decision about HIV testing. This session also provides an opportunity for education about risk reduction and HIV infection prevention for all patients.

Information to be covered in the pre-test session should include the following:

- The magnitude of HIV in Lesotho
- The magnitude of HIV among pregnant women
- How HIV is and is not transmitted
- Progression of HIV to AIDS
- Benefits of the HIV test
- The interaction between STIs and HIV transmission
- Risk reduction, safer sex practices and where to access condoms
- The risks of MTCT: during pregnancy, labour and delivery, and during breastfeeding
- The importance of delivering in a health facility
- Available opportunities for reducing MTCT of HIV, namely:
  - Nutrition and self care
  - Antiretroviral therapy
  - Antiretroviral prophylaxis
  - Modification of obstetric practices

- Safer infant feeding options (reinforcing exclusive breastfeeding for 6 months)
- Partner HIV testing and counselling, including couples counselling, either on-site or by referral
- Sharing test results with sexual partner and close family members (disclosure)
- Possible discordant HIV results
- Family planning options
- Newborn care
- Available opportunities for HIV related care, social, and emotional support

#### Section 3.3.1: The individual pre-test counselling session

- This should be conducted for women who require additional information after the group session and for following up those who might have declined testing previously. The health care worker should give the client the same information that would be given in the group education session on a one-to-one basis.
- It is useful if a woman is interested in testing but is undecided
- It allows an opportunity for questions and answers, for the health care worker to understand the reasons for declining the test, and to address specific issues.

#### Section 3.3.2: The couples pre-test counselling session

Male partners should be encouraged to take part in counselling and PMTCT activities.

The benefits of couples counselling include:

- Both partners are involved and are aware of their HIV status
- Partners can support each other through care and treatment activities
- Couples counselling can help prevent blame on the woman for the HIV infection
- Encourages safer sex and risk reduction
- Fosters implementation of the infant feeding option of choice

### **SECTION 3.4: HIV TESTS**

#### Section 3.4.1: HIV virologic tests (or direct tests) detect the presence of the virus in the blood

There are two kinds of HIV tests that detect the presence of the virus itself: the DNA PCR test is used for diagnosis of HIV infection in children younger than 18 months (before clearance of maternal antibodies). The test detects viral particles without quantification, giving a positive or negative result. The RNA PCR test quantifies the amount of viral particles in the blood, giving the number of copies detected per ml of blood. It is used for viral load assays and ongoing monitoring of HIV infected patients. Please refer to **Chapter 6 – Care of the Exposed Infant** for further information regarding HIV testing for infants and young children.

### Section 3.4.2: HIV serologic tests or indirect tests detect antibodies produced by the body in response to the infection

These tests detect antibodies against HIV but not the virus itself. Antibodies against the virus are produced by the body 1-3 months after infection. The period between infection and the development of antibodies is referred to as the “window period”. During this time an individual may test negative with an antibody test even though they are HIV infected.

The following is a list of HIV antibody tests used in Lesotho (please refer to Lesotho HTC Guidelines for further information about the testing procedure):

- **Simple / rapid HIV tests:** Rapid tests usually give results in less than 15 minutes. They are easy to perform, and are the recommended first line for HIV testing in Lesotho. The two tests currently in use in Lesotho are Determine and Double Check Gold.
- **ELISA (Enzyme Linked Immuno-Sorbent Assay) Test:** This test requires laboratory facilities, and results may not be available for several days (depending on available laboratory capacity).

All confirmed HIV infected patients should have blood submitted for CD4 cell count in order to determine an appropriate PMTCT intervention.

***Any health care worker who has received the appropriate training and has adequate supervision can perform rapid testing. Testing should be performed at all ANC, Maternity, MCH, PNC and Under-5 clinics.***

## **SECTION 3.5: INTERPRETING TEST RESULTS**

### Section 3.5.1: HIV positive result:

If the first rapid test is positive, the counsellor should not give results immediately, but should explain the need for a confirmatory test. A second sample should be taken during this session, and a second rapid test performed immediately to confirm the results of the first test; results should be given as soon as available, followed immediately by post-test counselling.

### Section 3.5.2: HIV negative result:

The meaning of a negative rapid test result should be explained and should include information about the window period. This should be used as an opportunity to counsel clients about the importance of staying negative and provide information on how to do so. Women who test negative during ANC should be re-tested at the following times:

- At 36 weeks gestation if the previous test was done more than 6 weeks earlier
- During labour or as soon as possible post delivery for those who did not retest as indicated above

### Section 3.5.3: Discordant results:

In some cases the Determine rapid test is positive and the Double Check Gold rapid test is negative. This can happen during the end of the window period (in an HIV infected individual) or because the person has other antibodies similar to those produced with HIV but due to another disease (a false positive result in an HIV uninfected individual). In order to differentiate between an individual who is at the end of the window period and one with a false positive result, a third (tie-breaker) test should be performed. During pregnancy it is preferable to immediately follow with an ELISA test. If the ELISA test is not available, a rapid test should be repeated after 3 to 6 weeks. While awaiting the definitive results of the tie-breaker test, the woman should be considered as HIV infected and care and treatment should proceed as indicated.

## **SECTION 3.6: POST-TEST COUNSELLING**

Post-test counselling should be confidential and conducted on a one-to-one basis even if pre-test information was provided to a couple. Check for understanding of the results (if not clear, then repeat pre-test counselling and provide further post-test counselling; this may occur on the same day of the test or later). The HIV test results should be given simply and clearly; never by telephone, mail, or via a friend, and preferably not before a weekend.

Principles of standard post-test counselling include the following:

- Allow time for the meaning and implications of the results to sink in
- Discuss the meaning of the test result (positive or negative) for the client
- Discuss the personal, family and social implications including who, if anyone, to disclose to
- Deal with immediate emotional reactions
- Discuss a personal risk reduction plan (including safer sex and MTCT)
- Identify options and resources available
- Check that adequate and immediate support is available
- Discuss immediate plans, intentions, and actions
- Discuss follow-up plans for emotional care and social support and make referrals where necessary

All women regardless of their HIV status should receive post-test counselling.

### Section 3.6.1: Post test counselling for HIV negative women

Women should be educated on how to remain HIV negative, as infection occurring during pregnancy or during breastfeeding is associated with a higher risk of MTCT. Key information for HIV negative pregnant women includes the following:

- Prevention of infection
  - Risk reduction
  - Safer sex practices with partner(s), especially condom use to prevent HIV infection during pregnancy and while breastfeeding
  - Condom negotiation



- Understand the meaning of discordance (when applicable)
- Encourage partner testing – emphasize to the client that it is possible that the partner could be infected by HIV, and therefore MTCT could occur if she seroconverts during the current pregnancy
- Explain the meaning of an HIV test, the "window period", and the need to repeat HIV testing at 36 weeks gestation
- The importance of family planning or child spacing
- Remember that it is important to provide ongoing follow up and counselling

### Section 3.6.2: Issues to be explored during post-test counselling of HIV positive women

- Assess readiness to receive results
- Coping with positive results
- Exploration of MTCT and possible ways to prevent it
- Safer sex: condom use to prevent re-infection
- Self care: hygiene and nutrition
- Infection prevention
- Screening for and treating STIs
- Screening for TB and chemoprophylaxis
- Chemoprophylaxis with co-trimoxazole for prophylaxis against Pneumocystis Jiroveci Pneumonia (PJP), if eligible
- Prompt health seeking behaviour
- Support systems at home and/or in the community
- Progression of HIV to AIDS
- Availability of care and treatment services
- Infant follow-up and testing
- Importance of partner testing
- Healthy lifestyle, and medical follow up highlighting the benefits of early PMTCT intervention especially during pregnancy and at delivery
- Deal with the patient on a personal level, according to her specific circumstances:
  - Provide more information about HIV and the health implications of HIV
  - Address any questions raised
  - Explore the possibility of disclosure to partner, family and friends

### Section 3.6.3: Advantages of disclosure of HIV results to a partner

- The partner may or may not be infected
- Disclosure may lead to the partner's testing
- The partner may offer support required for coping and adjusting
- Disclosure may lead to joint development of strategies for safer sex and infant feeding practices
- Disclosure may lead to joint decisions on future fertility intentions
- Disclosure may lead to openly accessing health care services and support groups that promote positive living

#### Section 3.6.4: PMTCT interventions (for those who test positive)

- Inform the patient of available PMTCT interventions
- Point out that ARV treatment and/or prophylaxis will reduce the risk of MTCT
- Explain to the patient which intervention is suitable for her based on her CD4 cell count and clinical stage
- Reinforce the need for delivering in a health facility
- Provide more information about HIV infection and safer sex practices

#### Section 3.6.5: Infant feeding options

- Refer to the Infant and Young Child Feeding Guidelines in the context of HIV and AIDS
- Discuss infant feeding options
- If the feeding choice is breastfeeding, emphasize the importance of exclusive breastfeeding for the first 6 months
- If the choice is replacement feeding, emphasize the importance of exclusive replacement feeding and the importance of proper hygiene and preparation of feeds
- Discuss the increased risk of HIV transmission with mixed feeding
- Support the woman's decision

#### Section 3.6.6: Planning for the future

- Provide more information about HIV infection and safer sex practices
- Provide information about making decisions on future fertility
- Re-cap information
- Identify suitable support networks and refer the patient accordingly to pre/post test HIV and AIDS support groups, peer educators/counsellors, community care providers/counsellors

### **SECTION 3.7: SUPPORT GROUPS**

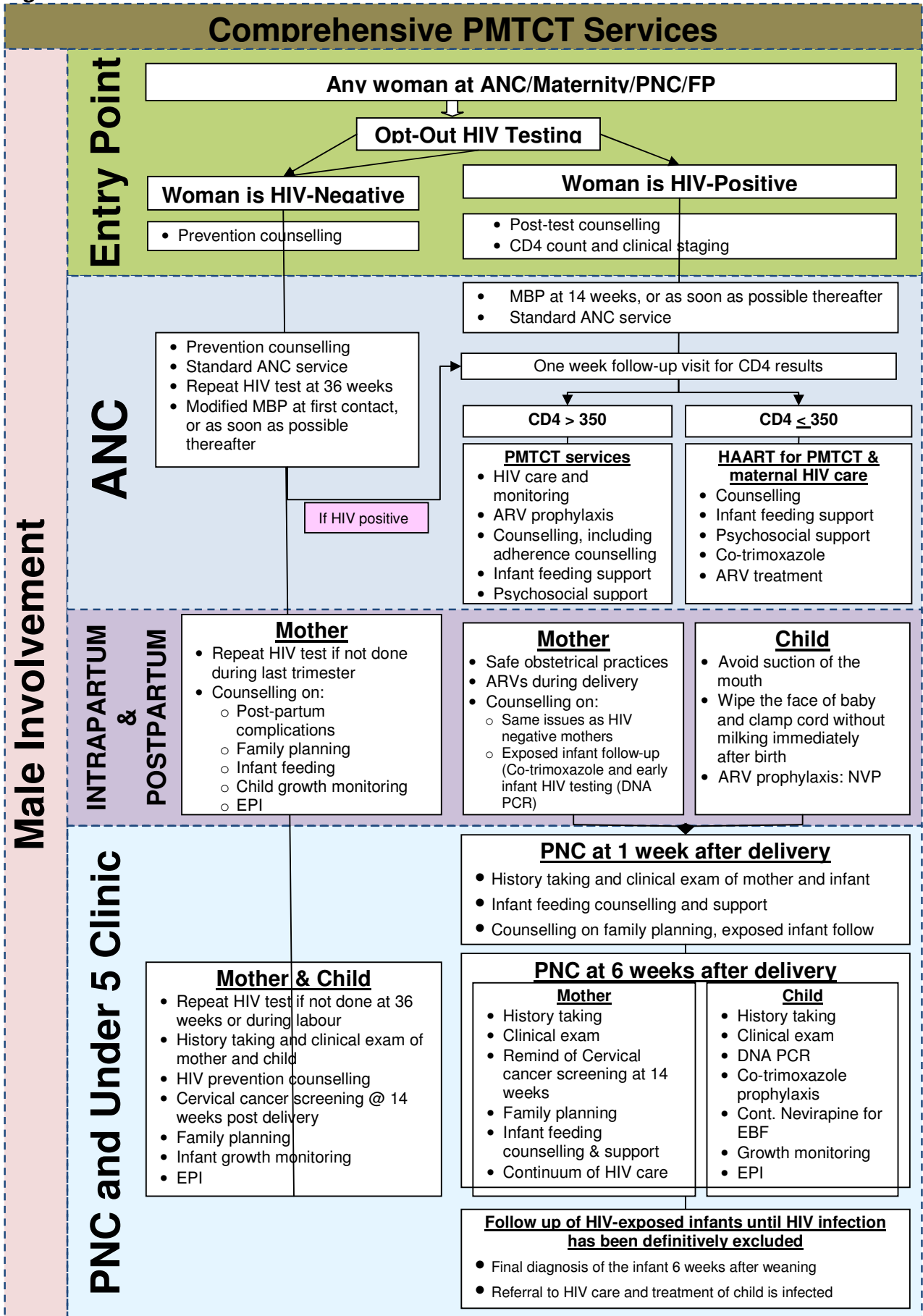
The health care provider should be aware of locally available expertise in the area of counselling for referral and subsequent effective management. Health institutions should collaborate with AIDS support groups in the community and utilize their services including peer counselling on site.

This is important for:

- Reducing fear, ignorance and stigma surrounding HIV
- Reducing the potential for domestic violence
- Stimulating a community response in those living positively with HIV/AIDS
- Contributing to an environment supportive of safer sexual behaviour
- Sharing understanding of the HIV disease with peers

The Algorithm on the following page summarizes the process of HIV Testing and Counselling and provision of PMTCT services in ANC, Maternity, MCH, PNC and Under-5:

Figure 4: Flow chart of PMTCT Services



## CHAPTER FOUR: MANAGEMENT OF HIV INFECTED PREGNANT WOMEN

PMTCT is one vital component of the package of services offered for mothers. HIV infected women require special care during pregnancy and breastfeeding to ensure optimum health benefits to the mother and the baby as well as to minimize the risk of transmission of HIV to the infant. HIV services for pregnant women (including on-going counselling, clinical and immunological staging, basic investigations and monitoring, prescription of ARVs for prophylaxis or treatment, and treatment of opportunistic infections) are integrated into standard MCH services.

### SECTION 4.1: IDENTIFICATION OF HIV STATUS IN PREGNANCY

#### Section 4.1.1: Identification of women who have been tested during ANC

The Lesotho Obstetric Record (LOR) has a specific section for identification of HIV infected women, which also includes PMTCT information. A woman will see many different health care providers during pregnancy, delivery, post-partum, and under-5 clinic visits. Quality of care can only be assured if the services provided are well documented and records are available for the next health care provider who might care for the same woman.

#### Section 4.1.2: Status at first visit and pre-test counselling

Many women are now coming for their first ANC visit with a known and documented HIV status. Those who have tested negative more than 3 months before the first ANC visit should be tested again at the first visit. Women who have had group education and have been offered the HIV test but declined should have this documented as it indicates whether the woman with unknown status has ever received education about HIV/AIDS and PMTCT.

#### Section 4.1.3: Testing

Women who test HIV negative at booking should be retested at 36 weeks gestation or during labour to exclude infection during pregnancy. All women with a positive test result should undergo clinical and immunological staging (CD4 cell count) to decide whether to initiate antiretroviral treatment (ART) or a prophylaxis regimen to prevent MTCT. Details of the regimen prescribed should be written in both the Bukana and the LOR in order to facilitate a smooth continuum of care during pregnancy, delivery, and the post-partum period.

Every woman should be given information that will encourage her to have her partner and other children access counselling and testing services. **This information will also facilitate a family-centred approach to HIV care and treatment.**

If a woman receives counselling and testing during labour or in the immediate post partum period before discharge, the information should be recorded with the other information related to delivery in the LOR (see figure 5) and the Bukana. If the

woman receives counselling and testing during a post-partum visit, the result should be recorded with the other information about the post-partum visit in the Bukana.

**Figure 5: Example of the new information included in the Lesotho Obstetric Record (LOR)**

*(Please circle appropriate)*

<b>PMTCT:</b> HIV status known at first visit? Yes / No		
Number of pre-test counselling sessions	0/1/2/3/4	
Test done: Yes / No      P N U	Date test 1	If N: test 2 P N U
CD4 count date:	Result	Clinical stage I II III IV
Eligible for treatment		
Y: ART Regimen	Date started	
N: MBP Given at 14/40	Date initiated	
Partner pre-test counselling: Yes / No	Partner testing: Yes / No	P N U

**SECTION 4.2: ANTENATAL SERVICES**

All pregnant women in Lesotho should have at least four antenatal visits; HIV positive pregnant women should receive integrated antenatal care services, and may require more than four antenatal visits.

Section 4.2.1: The first ANC visit

This visit should occur as early as possible and should comprise the following:

**a) Patient history**

- Take obstetric, gynaecological, surgical, medical (include symptoms of opportunistic infections), family and psychosocial history
- Determine drug history, known allergies and use of traditional medicines or herbal products
- Ask about alcohol or drug use and/or abuse

**b) Physical examination and vital signs**

- Conduct general clinical assessment, obstetric assessment (BP, uterine growth and foetal wellbeing), risk assessment, and assessment of current signs of illness; target common symptoms of TB, sexually transmitted infections (STIs) and HIV disease progression
- Conduct pelvic exam, including speculum and bimanual exams, if indicated by symptoms
- Perform staging of clinical disease (see Annex 2: WHO Clinical Staging of HIV Disease in Adults and Adolescents) to determine the need for ARV therapy

**c) Basic laboratory investigations**

- VDRL to screen for syphilis
- Hb to screen for anaemia
- Blood group and Rh factor
- Urine tests to detect urinary tract infection and protein
- HIV test if status is not already confirmed (for all pregnant women)

- CD4 cell count for immunologic staging (for all HIV positive pregnant women)
- ALT and creatinine – for all women already on ART at first ANC visit
- HBsAg to screen for Hepatitis B infection
- Hepatitis C serology

**d) Screening and management of anaemia**

- HIV positive pregnant women are at particularly high risk for anaemia – Hb screening should be performed at the first visit (and monthly thereafter)
- Women with severe anaemia (Hb < 8 g/dL) should be started on haematinics immediately, while the cause of anaemia is investigated
  - Those who fail to respond within one month should be referred for further management
  - Severe unexplained anaemia (normocytic, normochromic) is a WHO Clinical Stage 3 condition (see Annex 3); these women should be initiated on ART as soon as possible
  - All women presenting with severe anaemia during the third trimester of pregnancy should be initiated on ART as soon as possible

**e) Nutritional assessment and counselling**

- Assess adequacy of caloric and nutrient intake
- Provide folic acid, multivitamin and other micronutrient supplementation in the first trimester as per national guidelines
- Provide iron starting from the second trimester
- Counsel on proper diet based on available local resources
- Provide nutritional support if indicated

**f) STI screening**

- Assess risk for STIs
- Diagnose and treat early according to national guidelines
- Counsel about STIs, their signs and symptoms and how STIs increase the risk of HIV transmission
- Educate about avoiding transmission or re-infection

**g) Tuberculosis**

- Screen all women for TB who have had a cough, or any other symptoms suggestive of TB regardless of HIV status (see national TB guidelines for further details)
- Specific TB treatment regimens are recommended for women infected with HIV, pregnant women and women already receiving ART (see National TB guidelines)
- All HIV infected women, including those who are pregnant, should receive six months of Isoniazid Preventive Therapy (IPT) once active TB disease has been excluded (see National TB guidelines and TB/HIV guidelines for details).

**h) Prevention of opportunistic Infection (OI)**

- Give co-trimoxazole to all women with CD4  $\leq$  350 or WHO clinical stage 2, 3 and 4

**NOTE: Co-trimoxazole is not contraindicated at any stage during pregnancy.**

**i) Tetanus Immunization**

- Administer according to national guidelines

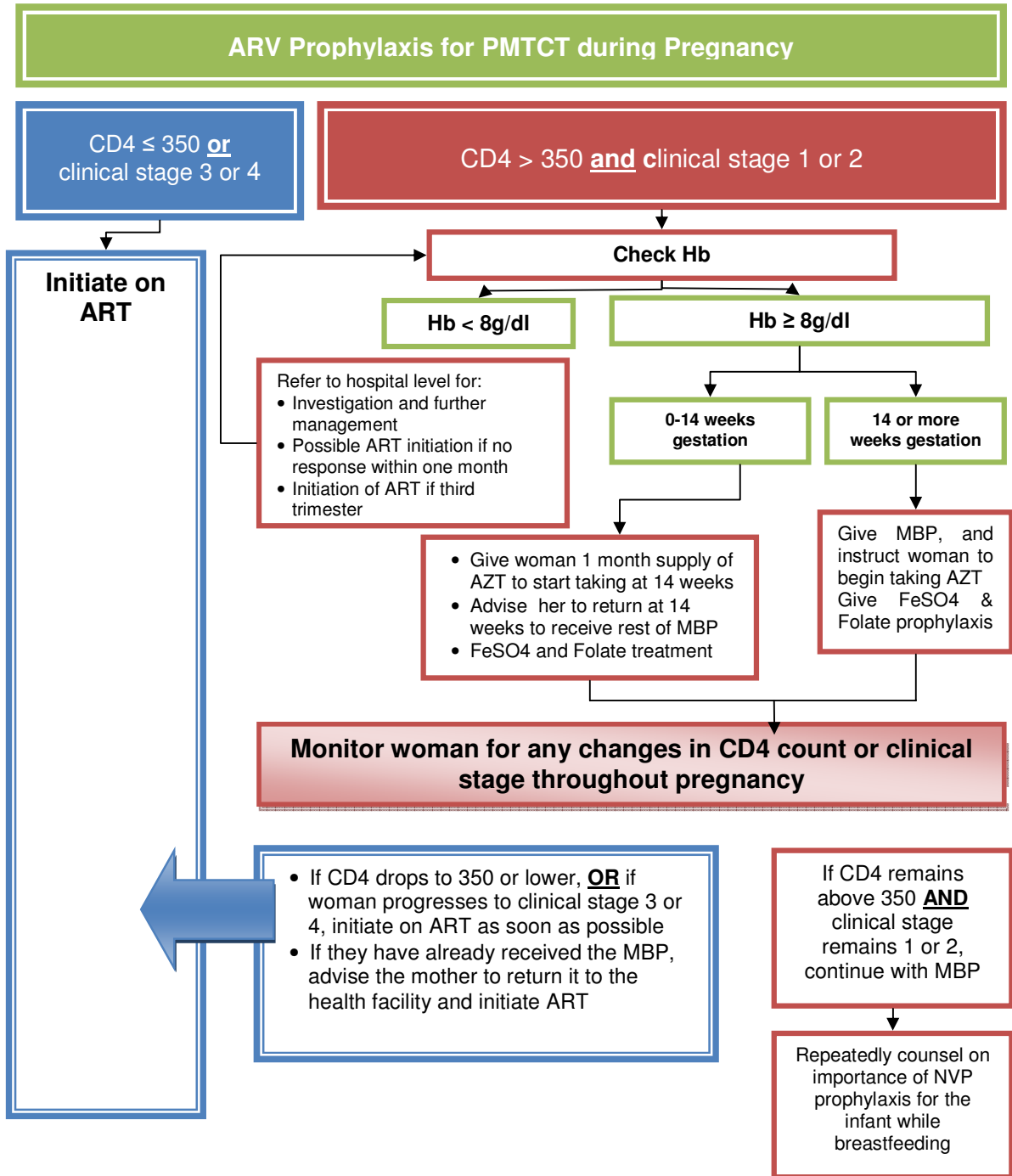
**j) ARV prophylaxis (see Figure 6 below)**

- The Mother Baby Pack (MBP) should be given at 14 weeks or as soon as possible thereafter (see chapter 5 for details)
- AZT (contained in the MBP) should be provided to all HIV positive pregnant women with clinical stage 1 and 2 with Hb  $\geq$  8g/dl from 14 weeks gestation (or as soon as possible thereafter).
  - If a pregnant woman presents earlier than gestational age of 14 weeks, she should be given 1 month's supply of AZT to start taking at 14 weeks and be advised to return to the facility for her MBP.
- ART should be initiated as soon as possible for all women with clinical stage 3 or 4 illness **or** CD4  $\leq$  350. All women who do not qualify for ART for their own health based on the CD4 test results and WHO staging should be continued on AZT prophylaxis.
- Women initially provided with the MBP, but in whom subsequent CD4 cell count results indicate that they are eligible for ART (CD4  $\leq$  350), or who progress to clinical stage 3 or 4 during the pregnancy, should be asked to return to the health facility with the MBP and be initiated on ART as soon as possible.
- Mothers should be counselled about the importance of NVP prophylaxis for infants during breastfeeding.

**k) Antiretroviral therapy (ART) during pregnancy**

- Determine eligibility for antiretroviral therapy, using CD4 cell count and clinical staging
- Provide ART when indicated, according to national guidelines
- A modified MBP (containing haematinics, Vitamin A, co-trimoxazole for the mother and Nevirapine for the infant) should be provided for all pregnant women on ART at 14 weeks or as soon as possible thereafter (see chapter 5 for details).
  - This modified MBP should also be provided to mothers who progress to ART eligibility during pregnancy.
- Mothers should be counselled about the importance of NVP prophylaxis for infants during first 6 weeks of life.

Figure 6: ARV Prophylaxis





## **l) Infant feeding**

- All women require infant feeding information, counselling and support (see chapter 7 for details on infant feeding). Quality counselling on infant feeding and family planning will help reduce the risk of HIV transmission from mother to child during breastfeeding and subsequent pregnancies. HIV infected women should be able to make their own informed choices about infant feeding after counselling (refer to Annex 7 and Infant and Young Child Feeding guidelines).
- For women who are not infected with HIV, or women whose HIV status is unknown, promote and support exclusive breastfeeding for the first six months. Appropriate complementary foods should be introduced thereafter, and breastfeeding should continue until 24 months of age or beyond.
- For HIV-infected women (whose infants are HIV uninfected or of unknown HIV status): Promote and support exclusive breastfeeding for the first 6 months of life. Appropriate complementary foods should be introduced thereafter, and breastfeeding should continue until 12 months of age.
  - Breastfeeding should then only stop once a nutritionally adequate and safe diet without breast milk can be provided.
- Infant ARV prophylaxis (with daily Nevirapine) should be continued until 6 weeks of age if the mother is on ART, or until 1 week after cessation of all breastfeeding if the mother is not on ART.
- Mothers known to be HIV infected who decide to stop breastfeeding at any time should stop gradually within one month (abrupt cessation of breastfeeding is no longer recommended).
  - Infants who have been receiving ARV prophylaxis should continue prophylaxis for one week after cessation of all breastfeeding.
- If infants and young children are known to be HIV infected (e.g. positive virological test for HIV), mothers are strongly encouraged to exclusively breastfeed for the first six months of life and continue breastfeeding for as long as possible (up to two years of age or beyond).
- Mothers who choose not to breastfeed may give replacement feeding with infant formula provided they meet specific conditions (see chapter 7)

## **m) Counselling on danger signs during pregnancy**

- Provide women with information and instructions on seeking care early during their pregnancy. Provide information on pregnancy complications such as:
  - Bleeding
  - Fever > 38°C
  - Pregnancy induced hypertension (swelling of hands and feet, severe headaches and blurred vision)
  - Severe pallor
  - Abdominal pain

- Pre-labour rupture of membranes
- Abnormal discharge
- Educate mothers about the importance of delivering in a safe environment with health care workers skilled in safer delivery practices, universal precautions, and the administration of ART or ARV prophylaxis to mother and child.
- Provide counselling about the effects of alcohol and injection drug use (IDU) on the growth and development of the foetus. Refer to treatment programmes if needed.

**n) HIV positive pregnant women have other care and support needs**

- Women with HIV are susceptible to opportunistic infections and other common infections because of their compromised immune systems. All infections can increase the risk of MTCT. Women should be monitored for the signs and symptoms of these infections, and any current opportunistic infections and co-morbid conditions should be managed appropriately.
- During pregnancy, special attention should be given to the following signs and/or symptoms:
  - **Oral and/or vaginal candidiasis** (thrush)
  - **Persistent diarrhoea for more than 2 weeks:** appropriate investigation, adequate treatment, and nutrition counselling should be provided to all women presenting with chronic diarrhoea during pregnancy.
  - **Chronic cough for more than 2 weeks:** respiratory infections, such as TB, bacterial pneumonia, or opportunistic infections, are common in HIV infected women and should be treated without delay.
  - **Herpes zoster (current or recurrent):** this is a common presenting feature of HIV infection, occurring early in the course of the HIV disease, and should prompt careful evaluation for other opportunistic infections.
  - **Genital herpes:** the newborn infant can become infected with herpes simplex virus during delivery if the mother has signs and symptoms of current genital disease (itching, burning, genital ulcerations). The expected mode of delivery should be discussed with the mother, particularly to assess whether caesarean section is a safe option in the health facility or if referral is possible. All episodes of genital herpes should be treated with acyclovir. Pregnant women with a history of genital herpes may benefit from starting prophylactic acyclovir at 36 weeks of gestation, if available.
  - **Other STIs:** STIs are common among HIV infected women. They should be diagnosed and treated early, as they can increase overall maternal and newborn morbidity and increase the risk of MTCT. Genital warts are common and tend to grow in pregnancy, sometimes to the extent of obliterating the birth canal; delivery options should therefore be discussed with a specialist.
  - **Weight gain or loss:** should be monitored closely. Failure to gain weight and weight loss during pregnancy are poor prognostic signs.

- Provide comprehensive HIV care and treatment services to all women in need or refer women to an HIV care and treatment clinic if these services are not offered at MCH or in the clinic.
  - Provide women with information on seeking prompt attention for symptoms of HIV disease progression.
- o) Effective contraceptive planning**
- Provide long-term family planning and contraceptive counselling, with partner involvement when possible.
- p) HIV prevention**
- HIV negative pregnant women who seroconvert during pregnancy and HIV positive women who get re-infected are at a higher risk of transmitting the virus to their infants because of a high viral load during this period. It is therefore important to recommend consistent and correct condom use for all pregnant women.
  - Counsel about the importance of correct and consistent use of condoms during pregnancy to prevent infection with other STIs, which can increase the rate of MTCT.
- q) Partners and family**
- Stress and lack of support have been linked to the progression of HIV infection - refer women, partners and families to community-based support groups or organizations where available.
  - Encourage and support partner testing, with referral to HIV care and treatment services if necessary.
  - Offer HIV testing for older siblings.

All HIV infected pregnant women should be enrolled in HIV care. Based on the results of the baseline assessment, a plan of care and monitoring should be decided on and explained to the pregnant woman.

#### Section 4.2.2: Subsequent ANC visits

**Table 4: Summary of services to be provided at subsequent ANC visits**

<b>Visit Number / When to provide</b>	<b>Service to be provided</b>
<b>1<sup>st</sup> Visit or booking</b> (when pregnancy is suspected)	See detailed description of services provided above A two-week follow up date must be given to women for results of laboratory investigations taken and decision on further management
<b>2<sup>nd</sup> Visit (28 weeks)</b>	Take pertinent history Check blood pressure, urine test Do an abdominal and physical exam

Visit Number / When to provide	Service to be provided
	<p>HIV testing:</p> <ul style="list-style-type: none"> <li>• Perform if not done at first visit</li> <li>• If the test is positive, draw blood for CD4 cell count and provide MBP</li> </ul> <p>Second dose of Tetatus Toxoid</p> <p>Provide 3 additional months' supply of iron and folate</p> <p>Repeat Hb for women on AZT</p> <p>Advise on safer sex and use of condoms during pregnancy; support disclosure and partner testing</p> <p>Chronic HIV care - follow sequence of care</p> <ul style="list-style-type: none"> <li>• Do clinical review and respond to problems</li> <li>• Give co-trimoxazole prophylaxis, if indicated as per national guideline</li> <li>• Monitor adherence to ART or ARV prophylaxis</li> </ul> <p>Advise and counsel on nutrition and self care</p> <p>Provide infant feeding counselling</p>
<b>3<sup>rd</sup> visit (32 weeks)</b>	<p>Pertinent history</p> <p>Check blood pressure and urine</p> <p>Do an abdominal and physical exam</p> <p>HIV testing:</p> <ul style="list-style-type: none"> <li>• Perform if not done previously</li> <li>• If the test is positive, draw blood for CD4 cell count and provide MBP</li> </ul> <p>Repeat Hb for women on AZT</p> <p>Was given 3 months supply at 28 weeks</p> <p>Reinforce infant feeding counselling</p> <p>Counsel on family planning</p> <p>Assist woman and family in developing a birth preparedness / complication readiness plan</p> <p>Advise and counsel on nutrition and self care</p> <p>Chronic HIV care - follow sequence of care</p> <ul style="list-style-type: none"> <li>• Do clinical review and respond to problems</li> <li>• Give co-trimoxazole prophylaxis, if indicated, as per national guideline</li> <li>• Monitor adherence to ART or ARV prophylaxis</li> </ul>
<b>4<sup>th</sup> visit (36 weeks)</b>	<p>Take pertinent history</p> <p>Check blood pressure and urine</p> <p>Do an abdominal and physical exam</p> <p>Repeat Hb, and VDRL for all women irrespective of HIV status</p> <p>HIV testing:</p> <ul style="list-style-type: none"> <li>• Repeat HIV test for all women who tested HIV negative more than 6 weeks previously</li> <li>• If the test is positive, draw blood for CD4 cell count and provide MBP</li> </ul> <p>Reinforce counselling on infant feeding and family planning</p>

Visit Number / When to provide	Service to be provided
	Review birth preparedness and complication readiness plan Advise and counsel on nutrition and self care Chronic HIV care - follow sequence of care <ul style="list-style-type: none"> <li>• Do clinical review and respond to problems</li> <li>• Give co-trimoxazole prophylaxis, if indicated, as per national guideline</li> <li>• Monitor adherence to ART or ARV prophylaxis</li> </ul>
5 <sup>th</sup> visit (38 weeks)	Take pertinent history Check blood pressure and urine Do an abdominal and physical exam Reinforce counselling on infant feeding and family planning Review birth preparedness and complication readiness plan Advise and counsel on nutrition and self care Chronic HIV care - follow sequence of care <ul style="list-style-type: none"> <li>• Do clinical review and respond to problems</li> <li>• Give co-trimoxazole prophylaxis, if indicated, as per national guideline</li> <li>• Monitor adherence to ART or ARV prophylaxis</li> </ul>

In many instances, pregnant women attend ANC only once, often late in pregnancy. For women who present late in pregnancy, having missed some of the scheduled visits, all services which have been missed should be provided during the visit. If pregnant women do make subsequent visits, all key messages, particularly those for HIV positive pregnant women, must be reinforced.

The following procedures should be avoided in HIV positive pregnant women as they increase the risk of HIV transmission to the foetus:

- Invasive procedures such as chorionic villus sampling, amniocentesis, and cordocentesis
- External cephalic version (ECV)

### **SECTION 4.3: INTRAPARTUM CARE**

HIV test results for all women presenting in labour should be reviewed. Testing should be performed for all women whose status is unknown or who have tested HIV negative earlier during pregnancy (at least 6 weeks prior), if not retested at 36 weeks.

The only obstetric factors that have consistently shown an association with increased risk of transmission are the mode of delivery and duration of membrane rupture. Delivery by caesarean section has been shown to reduce the risk of transmission if done electively (before the onset of labour). However, due to human resource and facility limitations, caesarean section for this purpose alone is not a feasible option in most settings in Lesotho. Hence the emphasis in the country is on safer obstetric practices during labour and vaginal delivery.

### Section 4.3.1: Intrapartum prophylaxis

- a) Administer ARV prophylaxis for the prevention of MTCT, in accordance with current recommendations
- b) Antibiotic prophylaxis prior to C/S - use a single dose prophylactic antibiotic prior to elective or emergency C/S to reduce the risk of obstetric infections

### Section 4.3.2: Safer obstetric practices for HIV infected women include:

#### **a) Avoidance of early artificial rupture of membranes (AROM)**

Routine artificial rupture of membranes is not recommended. AROM should be performed only for specific obstetric indications (e.g. arrest of labour progression), but only if normal vaginal delivery is expected to be imminent (within four hours of AROM). In all other cases AROM should be avoided, and caesarean section considered for foetal distress and abnormal progress of labour.

#### **b) Avoidance of routine episiotomies**

Episiotomy should be used only for specific obstetric indications, such as shortening the expulsion phase if foetal heart rate is indicative of foetal distress and the head is clearly retained by the perineum.

#### **c) Non-traumatising vaginal operative delivery**

If assisted delivery is required, it should involve as little trauma as possible. It is highly recommended to use a soft silicone cup for vacuum extractor at low pressure or forceps by **trained** personnel. Operative vaginal delivery can be life saving for the foetus and should be considered in cases of foetal distress during the end of the second stage of labour.

#### **d) Proper Use of the Partogram**

Proper and consistent use of the partogram in monitoring the progress of labour improves patient management and reduces the risk of prolonged labour in all women.

#### **e) Vaginal cleansing**

Vaginal cleansing with Hibitane (chlorhexidine 0.25%) solution reduces the risk of puerperal and neonatal sepsis. Before every vaginal examination, the birth canal should be wiped with cotton wool soaked in Hibitane solution. The number of vaginal examinations should be kept to the minimum required (one examination every 4 hours unless there is a specific reason for additional examinations).

#### **f) Active management of the third stage of labour**

Post-partum haemorrhage is one of the most common post delivery complications. Active management of the third stage of labour will lead to reduction in blood loss and the need for transfusion of blood.

#### **g) Avoidance of foetal scalp puncture**

Invasive procedures such as penetrating scalp electrodes and foetal blood sampling are likely to increase the risk of HIV transmission to the foetus and should be avoided if possible.

### Section 4.3.3: Care of the newborn

Blood and vaginal secretions of the mother are infectious to the newborn. To limit the risk of transmission of HIV from mother to child, it is recommended to:

- Wipe the infant's mouth and nostrils with cotton when the head is delivered to remove infectious secretions and blood
- Clamp the cord immediately after birth and avoid milking the cord
- Use suction only in cases of meconium-stained liquor; in this situation use soft manually operated suction, as electrically operated suction can more easily create small wounds and an entry point for HIV

Other important elements of care for the newborn include the following:

- Wipe the infant dry with a towel and establish skin-to-skin contact with the mother
- Keep the infant covered as much as possible to maintain warmth
- As for any infant, exposed infants should receive 1% tetracycline eye ointment or 1% silver nitrate eye ointment as prophylaxis against ophthalmia neonatorum, as well as Vitamin K 0.5mg IM immediately after birth
- Exposed infants should also receive Nevirapine prophylaxis as soon as possible after delivery, irrespective of the infant's age (see chapter 5)
- Support the mother to initiate infant feeding within the 1<sup>st</sup> hour of life
- Before discharge:
  - Give the newborn all routine recommended immunizations
  - Counsel the mother on the importance of co-trimoxazole prophylaxis starting at 6 weeks
  - Counsel the mother on the importance of Nevirapine prophylaxis for the infant while breastfeeding
  - Women on ART and those who are not going to breastfeed should be reminded to stop infant Nevirapine prophylaxis at 6 weeks of age
  - Counsel the mother on the need for a DNA PCR at 6 weeks of age and discuss where to take the child for the test
  - Encourage early intervention for any infections or illness

### Section 4.3.4: Universal precautions for delivery

Health workers should protect themselves against HIV infection by following universal precautions, including:

- Reducing needle stick injuries by discarding used needles without recapping, using a needle holder during episiotomy suturing, and placing needles and other sharps in the appropriate containers
- Decontaminate all instruments with 10% Sodium Hypochlorite
- Washing hands immediately after contact with blood or body fluids
- Wearing suitable gloves when handling blood or body fluids
- Covering broken skin or open wounds with waterproof dressings

- Wearing an impermeable plastic apron for delivery
- Wearing an eye shield for operating or assisting at caesarean section, and for suturing episiotomies
- Wearing double gloves for all operations; this reduces the amount of blood carried through if the glove is punctured
- Decontaminating linen, beds and surfaces using freshly prepared 10% Sodium Hypochlorite, or sterilizing linen by autoclaving
- Covering all mattresses in the labour room, operating theatre, wards, and examination couches with a fresh mackintosh for every new patient lying on those surfaces
- Avoiding patient sharing of beds, equipment, or linen
- Using long cuffed gloves for manual removal of a placenta
- Avoiding unnecessary suction of newborns and using mechanical or bulb suction if it must be done
- Disposing of solid waste such as blood soaked dressings or placentas safely, according to the local procedures

#### **SECTION 4.4: POSTPARTUM CARE**

HIV infected women who have just delivered need the same postpartum care as uninfected women. The postpartum period is a critical transitional time for women, their newborns and families. Ideally a skilled health worker should care for the mother and newborn together in the postpartum period.

Important components of postpartum care at six hours and seven days (one week) after delivery for the new mother and infant are outlined below. Annex 2 provides a package of services for women and infant during recommended subsequent follow-up visits.

##### Section 4.4.1: Care within 6 hours of delivery

**Table 5: Care for the mother and infant within 6 hours of delivery**

Mothers	Infants
<ul style="list-style-type: none"> <li>• Assess maternal well-being</li> <li>• Measure blood pressure and body temperature</li> <li>• Assess for vaginal bleeding, uterine contraction and fundal height</li> <li>• Identify any signs of serious maternal complications (haemorrhage, eclampsia, or infection) and initiate treatment immediately</li> <li>• Suture episiotomy or perineal tears as appropriate</li> <li>• Advise on where to call for help in case of emergency</li> <li>• Immunize with Tetanus Toxoid if not done during pregnancy</li> <li>• Support initiation of breastfeeding, if this is the chosen infant feeding method</li> <li>• Give a single dose of Vitamin A 200,000 IU</li> <li>• Ensure the continuation of ART or AZT/3TC tail as appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• Thermal protection for the baby, providing a warm environment and keeping mother and infant together</li> <li>• Frequent exclusive breast feeding, if this is the chosen method of infant feeding</li> <li>• Keep the infant clean</li> <li>• Clean cord care</li> <li>• Weigh the infant</li> <li>• Physical examination as per standards</li> <li>• Frequent observation of baby by the mother for danger signs</li> <li>• Immunize with BCG and OPV</li> <li>• Ensure initiation of NVP prophylaxis for HIV exposed infants</li> </ul>



#### Section 4.4.2: Care before discharge from the health facility

- Continue micronutrient supplementation for the mother with iron, folate, and Vitamin B complex
- Offer HIV testing as soon as possible if not done already
  - Initiate Nevirapine prophylaxis immediately for the infant in case of a positive test result
- Women with advanced HIV disease are at higher risk for complications such as infection or severe anaemia; special attention should be given to the following before discharge from the health facility:
  - Signs and symptoms of postpartum infection: pain on passing urine; fever; foul-smelling lochia; cough; sputum; shortness of breath; redness, pain, pus, or drainage from vaginal lacerations, episiotomy site, or caesarean section incision; lower abdominal tenderness
  - Signs and symptoms of severe anaemia: pallor; tachycardia; shortness of breath; fatigue
- All women, but particularly HIV infected women, should receive counselling before discharge on:
  - Care of the breasts: appropriate prevention and management of engorgement by emptying both breasts; management of nipple fissures or cracks; assistance in positioning and attachment; and recognition of breast infections early in order to seek prompt treatment
  - Care of the perineum: hygiene of the perineum with saline sitz baths and frequent changing of sanitary pads; recognition and prompt treatment of suspected vulval infections
  - Post-partum complications and when to seek care: puerperal sepsis, prolonged vaginal bleeding, deep venous thrombosis and pulmonary embolism
  - Infant feeding
  - Family planning
  - Exposed infant follow-up: growth, development and clinical monitoring; co-trimoxazole prophylaxis; appropriate immunizations; multivitamin supplementation; Nevirapine prophylaxis (until one week after cessation of all breast feeding for infants of women not on ART; or until 6 weeks of age for infants of women on ART or not breastfeeding); and early infant diagnosis of HIV using DNA PCR testing
  - Disposal of potentially infectious soiled pads or other materials.
- Discharge on:
  - Micronutrient supplementation for the mother with iron, folate, and vitamin B complex
  - AZT/3TC for 1 week or continuation of ART for all eligible women
  - Once daily Nevirapine prophylaxis for the infant (see Table 8, Chapter 5 for simplified dosing)
  - Schedule return visit

### Section 4.4.3: Early post-partum care (one week post delivery):

HIV infected women should be seen for the first post-partum visit 7 days after delivery. Issues to address at this visit include:

#### **a) Interventions for the mother:**

- History
  - Any current complaints or any danger signs?
  - Post partum history: Is the lochia decreasing? Is there any abdominal pain?
  - Care and treatment for HIV: Has the mother continued using her ARVs since delivery? When is her next CD4 count or appointment for HIV care planned?
  - What is her tetanus toxoid status?
  - Infant feeding: How is it going? Is she practising her feeding method of choice exclusively? If exclusively breast feeding, are there any nipple or breast complaints? When and how does she plan to wean? If exclusively replacement feeding, are the feeds being prepared appropriately and hygienically? Ensure that she is not mixed feeding.
- Physical examination
  - Check BP, pulse, respiratory rate and temperature
  - Physical assessment of general health
  - Check breasts
  - Genital inspection, including assessment for STIs
  - Check the incision if delivered by caesarean section
  - Check for anaemia

#### **b) Interventions for the infant**

- History
  - Was the infant immunized at birth?
  - Is the infant still taking Nevirapine, and for how long should the child take it?
  - Are there danger signs for the newborn?
- Physical examination
  - Check respiratory rate, pulse, and temperature
  - Check the infant's weight
  - Check the infant's general condition (respiratory effort, alertness, tone, nutrition, hydration, pallor, reactivity, cry)
  - Check the cord: Is there any bleeding or oozing pus?

#### **c) Counsel on:**

- Danger signs for the mother and infant during the postpartum period
- Birth spacing plan and family planning
- Complication readiness
- Nutrition

- Infant feeding
- Safer sex
- Early infant diagnosis of HIV
- Co-trimoxazole prophylaxis for the infant at 6 weeks of age
- Counsel on continuation of Nevirapine prophylaxis for 6 weeks for infants of mothers on ART and those who have opted not to breastfeed
- Counsel on continuation of Nevirapine prophylaxis until one week after cessation of all breastfeeding for infants of mothers who are not on ART
- Infant follow-up: growth, development, clinical monitoring, immunizations
- Early infant diagnosis of HIV using DNA PCR test at 6 weeks of age or as soon as possible thereafter.

#### **SECTION 4.5: VILLAGE HEALTH WORKERS (VHWS)**

Village Health Workers are comprised of community health workers and Traditional Birth Attendants and are trusted and respected members of the community chosen by the community to promote good health practices as well as provide some preventive and curative aspects of health care. As a large proportion of women in Lesotho deliver outside of health facilities, VHW roles in maternal and child health care include:

- VHWs can play a vital role in HIV education of the community and in providing emotional support
- They can promote early initiation of ANC for HIV positive pregnant women to benefit from early initiation of ARV prophylaxis
- They should encourage and refer women for labour and delivery in health facilities
- They should be educated about the specifics of PMTCT (proper use of the MBP) for HIV positive women delivering outside of health facilities
- They should track and bring mothers and children to health facilities if they fail to return for follow-up

In order to carry out these roles effectively, VHWs need education and support in the following areas:

- Education about the risks of MTCT and prevention of MTCT
- Education on the benefits of their clients knowing their status
- UNIVERSAL PRECAUTIONS: they need to understand their own risk of infection and how to protect themselves

#### **SECTION 4.6: TB DIAGNOSIS AND TREATMENT OF PREGNANT AND BREASTFEEDING WOMEN**

##### Section 4.6.1: Introduction

The highest priority for TB control is the identification and cure of infectious cases, i.e. patients with sputum smear-positive PTB. Therefore, all patients (regardless of HIV status) with clinical features suggestive of PTB must submit sputum for diagnostic sputum smear microscopy.

All pregnant women should be screened for tuberculosis; women should be asked about symptoms and signs of TB, and anyone with a cough of more than 2 weeks duration, weight loss, fatigue, or night sweats should be further investigated for TB through sputum examination.

All pregnant HIV infected women with a negative symptom screen for tuberculosis or in whom active TB disease has been excluded (see below) are eligible for Isoniazid Preventive Therapy (IPT), provided there are no contraindications (active hepatitis or symptomatic peripheral neuropathy). If IPT is contraindicated, screening should be repeated following resolution of these conditions, with initiation of IPT when appropriate. All HIV positive pregnant women should be evaluated according to the National TB and TB/HIV guidelines and should receive 6 months of IPT if they qualify.

#### Section 4.6.2: Symptoms

- a) Over 90% of patients with sputum smear-positive PTB develop a cough soon after disease onset. The most common symptoms of pulmonary tuberculosis are:
  - Persistent cough; every pregnant mother presenting to a health facility with this symptom should be designated a “tuberculosis suspect”
  - Sputum production, which may be blood-stained
  - Shortness of breath and chest pain
  - Loss of appetite and weight loss or failure to gain weight
  - A general feeling of illness (malaise)
  - Fatigue and loss of motivation
  - Night sweats and fever
- b) A patient presenting with these symptoms who is or was in contact with a person with infectious tuberculosis is more likely to be suffering from pulmonary tuberculosis.
- c) Symptoms of extra-pulmonary tuberculosis depend on the organ system involved: chest pain from tuberculosis pleurisy, enlarged lymph nodes, severe chronic head and neck pain, and sharp angular deformity of the spine are some of the most frequent signs of extra-pulmonary tuberculosis.
- d) The following characteristics, when present in a patient with TB disease, increase the risk for infectiousness:
  - Cough
  - Cavitations on chest radiograph
  - Positive acid-fast bacilli (AFB) sputum smear result
  - Respiratory tract disease with involvement of the larynx (substantially infectious)
  - Respiratory tract disease with involvement of the lung or pleura (exclusive pleural involvement is less infectious)
  - Failure to cover the mouth and nose when coughing

**All TB suspects who present to MCH should be recorded in a registry of “TB suspects”. This registry provides an optimal means of recording all the**

**symptomatic patients classified as TB suspects. It is particularly useful for health facilities without microscopy, which monitor sputum samples sent to other laboratories, and is also useful for evaluating the prevalence of TB suspects at first level health facilities and estimating the supplies needed for bacteriological examinations.**

Number of sputum samples and details of their collection:

At least three sputum specimens should be taken from a TB suspect. The first specimen should be obtained on the spot after coughing and clearing the back of the throat. The second specimen should be an early morning specimen, taken on the following day. The third specimen should be collected on the spot when the patient returns to MCH with the other specimens.

**Note:** The sputum container should always be labelled as the lids may get mixed up.

Section 4.6.3: Indications for chest x-ray:

**a) When the sputum results are positive**

- Suspected complications, e.g. a breathless patient needing specific treatment (e.g. pneumothorax or pleural effusion)
- Frequent or severe haemoptysis
- To help in diagnosing other lung diseases
- Only one of the three pre-treatment smears is positive

**b) When sputum results are negative**

- If you still suspect TB clinically despite negative smears, the patient should have a chest x-ray to help make a decision regarding diagnosis and treatment
- A radiographer should be informed about the pregnancy status in order to shield the foetus from radiation

Section 4.6.4: Treatment

Treatment for pregnant women:

- Untreated tuberculosis represents a far greater hazard to a pregnant woman and the foetus than does treatment of the disease. It is important to ask a woman before starting TB treatment if she is pregnant. Most TB drugs are safe for use in pregnant women; the exception is streptomycin which is ototoxic to the foetus and should not be used during pregnancy. Isoniazid, rifampicin, pyrazinamide and ethambutol are safe to use during pregnancy and the same weight bands for calculation of doses apply as for non-pregnant women.
- Because tuberculosis is a WHO Clinical stage 3 condition, all women requiring TB treatment are eligible for initiation of ART, regardless of CD4 cell count. Women with active tuberculosis should start ART as soon as possible (within the first 8 weeks of TB treatment initiation). Efavirenz is the NNRTI of choice, and should be used as long as the mother is beyond the first trimester of pregnancy.

Women with tuberculosis in the 1<sup>st</sup> trimester should be managed in consultation with a specialist in TB/HIV co-infection.

- Similarly, for women who are already on ART and in need of TB treatment, Efavirenz is the NNRTI of choice. Women who are on a Nevirapine-based regimen should be switched to EFV, as long as they are beyond the first trimester of pregnancy. Women in the 1<sup>st</sup> trimester who are on ART and in need of TB treatment should be managed in consultation with a specialist in HIV and TB.

#### Treatment for breastfeeding women:

A woman who is breastfeeding and has TB should receive a full course of TB treatment. Timely and properly applied chemotherapy is the best way to prevent transmission of tuberculosis to her baby. All of the standard first-line TB drugs are compatible with breastfeeding and a woman taking them can safely continue to breastfeed her baby. The mother and baby should stay together and breastfeeding should continue in the normal way. The infant should be given prophylactic Isoniazid for at least six months (Isoniazid 10 mg/kg daily), along with pyridoxine 12.5 mg daily, once active tuberculosis disease has been excluded (see National TB guidelines for further details). BCG vaccination of the newborn should be postponed until Isoniazid prophylaxis has been completed.

#### Treatment for women taking the oral contraceptive pill:

Rifampicin interacts with the combined oestrogen/progesterone contraceptive pill, resulting in a risk of decreased protective efficacy against pregnancy. A woman who has been using this method of contraception may choose between the following two options while receiving TB treatment with rifampicin:

- Use of another form of contraception (following consultation with a physician), with Depo-Provera being the most commonly used alternative
- Use of an oral contraceptive pill containing a higher dose of oestrogen (50 mcg)

#### Section 4.6.5: Contact with a source case:

A close contact is defined as a person living in the same household or in frequent contact with a source case (e.g. caregiver) with sputum smear-positive TB. The following points are of importance for children:

- All children (particularly those under 5 years of age) who have been in close contact with a source case must be screened for TB. Once active TB disease has been ruled out, the child should be provided with Isoniazid Preventive Therapy (IPT) for six months (Isoniazid 10 mg/kg daily + Pyridoxine 12.5 – 25 mg daily)
- All HIV infected infants (< 12 months of age) should receive IPT (Isoniazid 10mg/kg daily + Pyridoxine 12.5mg daily) if in contact with a source case (once active TB disease has been excluded)

- All HIV infected children (aged 1 year and above) should receive IPT, regardless of exposure to a source case (once active TB disease has been excluded). See national TB guidelines for further details.
- BCG vaccination in TB-exposed newborns that are on INH prophylaxis should be delayed, as BCG is a live attenuated vaccine; its effectiveness may be reduced if the baby is on treatment for TB infection or TB disease

## SECTION 4.7: HIV CARE AND TREATMENT FOR PREGNANT WOMEN

### Section 4.7.1: Prophylaxis of opportunistic infections with Co-trimoxazole:

Co-trimoxazole prescribed during pregnancy to eligible women reduces the risk of *Pneumocystis Jiroveci* Pneumonia (PJP, formerly known as *Pneumocystis Carinii* Pneumonia (PCP)), chorioamnionitis, and post-partum sepsis. Indications for co-trimoxazole prophylaxis in pregnant women include the following:

- Clinical stages 3 and 4 (note that this includes all patients receiving TB treatment)
- Clinical stages 1 and 2, if the CD4 count is  $\leq 350$  cells/mm<sup>3</sup>
- Clinical stages 2, 3, or 4 if CD4 cell count testing is not readily available

Table 6 below summarizes the indications for Co-trimoxazole prophylaxis:

**Table 6: Co-trimoxazole (CTX) Prophylaxis in Adults and Adolescents**

		CD4 is not readily available
4	Daily CTX	Daily CTX
3	Daily CTX	Daily CTX
2	Daily CTX if CD4 $\leq 350$	Daily CTX
1	Daily CTX If CD4 $\leq 350$	Do not give CTX routinely

**Dosage:** 960 mg daily (2 Single-Strength tabs or 1 Double-Strength tab)

### Section 4.7.2: Co-trimoxazole should be avoided in the following situations:

- A history of a severe rash with prior use of CTX (or any other 'sulfa' drug)
- Pre-existing significant renal disease
- Pre-existing significant hepatic disease

Women in whom Co-trimoxazole is contraindicated should be offered Dapsone 100 mg daily (children: 2 mg/kg daily) in place of co-trimoxazole.

**Note:** Co-trimoxazole prophylaxis is safe for use during any stage of pregnancy.

Table 7 below provides guidance on when to give antiretroviral prophylaxis for PMTCT and when to initiate ART based on both clinical and immunological staging (using CD4 cell count).

**Table 7: Regimen choice (ART vs. antiretroviral prophylaxis) and monitoring during pregnancy and breastfeeding**

WHO clinical stage	CD4 cell count	Decision	Patient monitoring
1	> 500 cells/mm <sup>3</sup>	PMTCT Prophylaxis regimen	Clinical assessment and CD4 count after 6 months
	350 - 500 cells/mm <sup>3</sup>	PMTCT Prophylaxis regimen	Clinical assessment and CD4 count after 3 months
	≤ 350 cells/mm <sup>3</sup>	ART	Start co-trimoxazole and ART monitoring
2	> 500 cells/mm <sup>3</sup>	PMTCT Prophylaxis regimen	Clinical assessment and CD4 count after 6 months
	350 - 500 cells/mm <sup>3</sup>	PMTCT Prophylaxis regimen	Clinical assessment and CD4 count after 3 months
	≤ 350 cells/mm <sup>3</sup>	ART	Start co-trimoxazole and ART monitoring
3	Any CD4 count	ART and OI treatment	Start co-trimoxazole and ART monitoring
4	Any CD4 count	ART and OI treatment	Start co-trimoxazole and ART monitoring



## **CHAPTER FIVE: ANTIRETROVIRAL REGIMENS FOR PMTCT**

Antiretroviral drugs, used for prophylaxis, decrease viral replication and viral load and significantly reduce the risk of mother to child HIV transmission. Combination ARV prophylaxis is recommended for PMTCT for all women who do not meet the eligibility criteria for ART. HIV positive pregnant women with clinical Stage 3 or 4 disease or with Clinical Stage 1 or 2 disease with a CD4 cell count  $\leq 350$  cells/mm<sup>3</sup> should be started on ART irrespective of gestational age, and continue throughout pregnancy, delivery and thereafter.

ART, which is used for treatment of HIV disease in the mother, not only reduces the risk of transmission of HIV to the infant significantly, it also reduces maternal morbidity and mortality and improves the quality of life of women living with HIV. The recommended protocols for antiretroviral prophylaxis and for ART are described in this chapter.

### **SECTION 5.1: ARV PROPHYLAXIS REGIMENS FOR PMTCT (CD4 > 350)**

#### Section 5.1.1: Antepartum

AZT 300 mg BD is initiated at 14 weeks gestation, or as soon as possible thereafter, (if Hb is 8 g/dl or above and the woman does not show any clinical signs of severe anaemia). AZT 300 mg BD should be initiated even before the CD4 count result has been received. The prophylaxis regimen can later be switched to ART without interruption if the CD4 count result indicates that she is eligible for treatment.

#### Section 5.1.2: Intrapartum

The health care worker should confirm that the mother has taken labour doses of prophylaxis and, if not, administer them as follows: NVP 200 mg, AZT 600 mg (2 tablets), and 3TC 300 mg (2 tablets) [or Combivir 2 tablets]; then AZT 300 mg and 3TC 150 mg (or Combivir 1 tablet) 12 hours later if delivery has not yet occurred. It should be ensured that the woman is in active labour before the prophylactic drugs are given. The tablets must be taken at least 2 hours before delivery to be effective. If delivery is imminent when the woman presents, (cervical dilatation is complete and presentation is engaged), the tablets should be omitted.

#### Section 5.1.3: Postpartum

AZT 300 mg BD and 3TC 150 mg BD (or Combivir 1 tablet BD) should be given for 7 days. If Nevirapine was not taken by the mother during labour, these medications are not necessary as their purpose is to prevent maternal resistance to NVP.

#### Section 5.1.4: Infant prophylaxis

Nevirapine syrup (1.5ml if birth weight is  $\geq 2.5$ kg, or 1ml if birth weight is 2 – 2.49kg) should be given immediately after birth (or as soon as possible thereafter), and continued daily at the appropriate dose for age throughout the breastfeeding period (until at least one week after cessation of all breastfeeding). For mothers on ART and those who choose to exclusively formula feed their children, Nevirapine

prophylaxis should be given for 6 weeks only. Table 8 below indicates the dosing of infant Nevirapine prophylaxis for age.

**Table 8: Infant dosing of Nevirapine Syrup**

Infant Age	NVP Daily Dose
Birth to 6 weeks <ul style="list-style-type: none"> <li>• Weight &lt; 2kg</li> <li>• Weight 2-2.49kg</li> <li>• Weight ≥ 2.5kg</li> </ul>	consult paediatric HIV specialist 1 ml 1.5 ml
≥ 6 weeks to 6 months	2 ml
≥ 6 months to 9 months	3 ml
≥ 9 months to end of breastfeeding	4 ml

A summary of ARV prophylaxis regimens for the mother and infant is provided in Annex 4.

#### Section 5.1.5: How to deal with other scenarios

- **Women who are diagnosed HIV positive in labour and did not receive ARV drugs during pregnancy:** give NVP 200 mg, AZT 600 mg (2 tablets), and 3TC 300 mg (2 tablets) [or Combivir 2 tablets]; then AZT 300 mg and 3TC 150 mg (or Combivir 1 tablet) 12 hours later if delivery has not yet occurred. Continue with postpartum doses of AZT and 3TC.
  - The infant should receive NVP syrup immediately after birth (or as soon as possible thereafter), and continue at appropriate dose throughout the breastfeeding period (until at least one week after cessation of all breastfeeding).
  - For mothers who choose to exclusively formula feed their infants, NVP prophylaxis should be given for 6 weeks only.
- **Women who did not receive ARV drugs during pregnancy or labour** should not receive any ARVs during the postpartum period.
  - The infant should, however, receive NVP syrup immediately after birth (or as soon as possible thereafter), and continue at appropriate dose throughout the breastfeeding period (until at least one week after cessation of all breastfeeding).
  - For mothers who choose to exclusively formula feed their infants, NVP prophylaxis should be given for 6 weeks only.
- **Women who present with false labour:** If NVP was given, DO NOT repeat the dose of NVP when labour is established; if the woman had started AZT and 3TC together with NVP, NVP should not be repeated. However, AZT and 3TC should be given in 12 hours if not delivered, and continued twice daily for at least 7 days. If still not delivered by that time, AZT prophylaxis should be resumed, and AZT/3TC restarted (without NVP) once true labour has been established.

- **Elective caesarean section:** Give NVP 200 mg and AZT 600 mg + 3TC 300 mg (or Combivir 2 tablets) at least 2 hours before surgery. If the caesarean section is not complicated by intestinal perforation, the woman can take Combivir as soon as 6 hours after the surgery (and continue twice daily until 7 days after delivery).
- **Emergency caesarean section:** NVP 200 mg should be administered, if not already given, and AZT 300 mg BD and 3TC 150 mg BD should be given for 7 days after delivery. The dose of NVP should not be repeated even if the mother did not receive any prior prophylaxis. If the caesarean section is not complicated by intestinal perforation, the woman can take Combivir as soon as 6 hours after the surgery (and continue twice daily until 7 days after delivery).
- **Exposed infant discovered post delivery:** The infant should receive NVP syrup as soon as possible, and continue at the appropriate dose for weight throughout the breastfeeding period (until at least one week after cessation of all breastfeeding).
  - For mothers who are exclusively formula feeding their infants, NVP prophylaxis should be given for 6 weeks only.

## **SECTION 5.2: MOTHER-BABY PACK**

The mother-baby pack (MBP) should be offered to all HIV positive women at the point of testing (usually the first visit).

*According to the 2009 Demographic Health Survey (DHS), more than 91.8% of the pregnant women in Lesotho attend ANC at least once. Attendance decreases with each subsequent visit, with only 60% of all women attending four times. Almost half of all women in Lesotho deliver outside health facilities. Whereas all efforts should be made to increase the number of ANC visits and the number of health facility deliveries (and thus the number of women receiving the full ARV prophylaxis regimen), for all women who have attended ANC at least once and tested HIV positive, it should be ensured that mothers receive the mother-baby pack.*

The MBP consists of:

- Antenatal AZT tablets (300 mg) - to cover the period from 14 weeks until labour starts
- A pack of one tablet of NVP (200 mg) together with 17 tablets of Combivir (or 17 tablets of AZT 300 mg and 17 tablets of 3TC 150 mg if Combivir is not available), with instructions for the mother to take at the onset of labour and continue throughout labour and for 7 days after deliver
- Ferrous sulphate tablets - 200 mg daily through 6 weeks postpartum
- Folic acid tablets - 5 mg daily through 6 weeks postpartum
- Vitamin B Complex - 2 tablets daily through 6 weeks postpartum
- Vitamin A 200,000 IU
- NVP syrup for the infant with syringe and instructions to the mother on how to administer

- Instructions for the mother:
  - To bring the MBP with her to every visit (for assessment of adherence)
  - To return for her first post-natal visit (with the infant) within 7 days of delivery

Community health workers should follow up with all women who do not return for follow up ANC visits.

The modified MBP for pregnant women on ART consists of:

- Ferrous sulphate tablets 200 mg daily through 6 weeks postpartum
- Folic acid tablets - 5 mg daily through 6 weeks postpartum
- Vitamin B Complex - 2 tablets daily through 6 weeks postpartum
- Co-trimoxazole tablets - 960mg daily (2 Single-Strength tabs or 1 Double-Strength tab) for the mother
- Vitamin A 200,000 IU
- Nevirapine syrup for the baby with syringe and instructions to the mother on how to administer

### **SECTION 5.3: ASSESSMENT AND MONITORING OF WOMEN ON ARV PROPHYLAXIS**

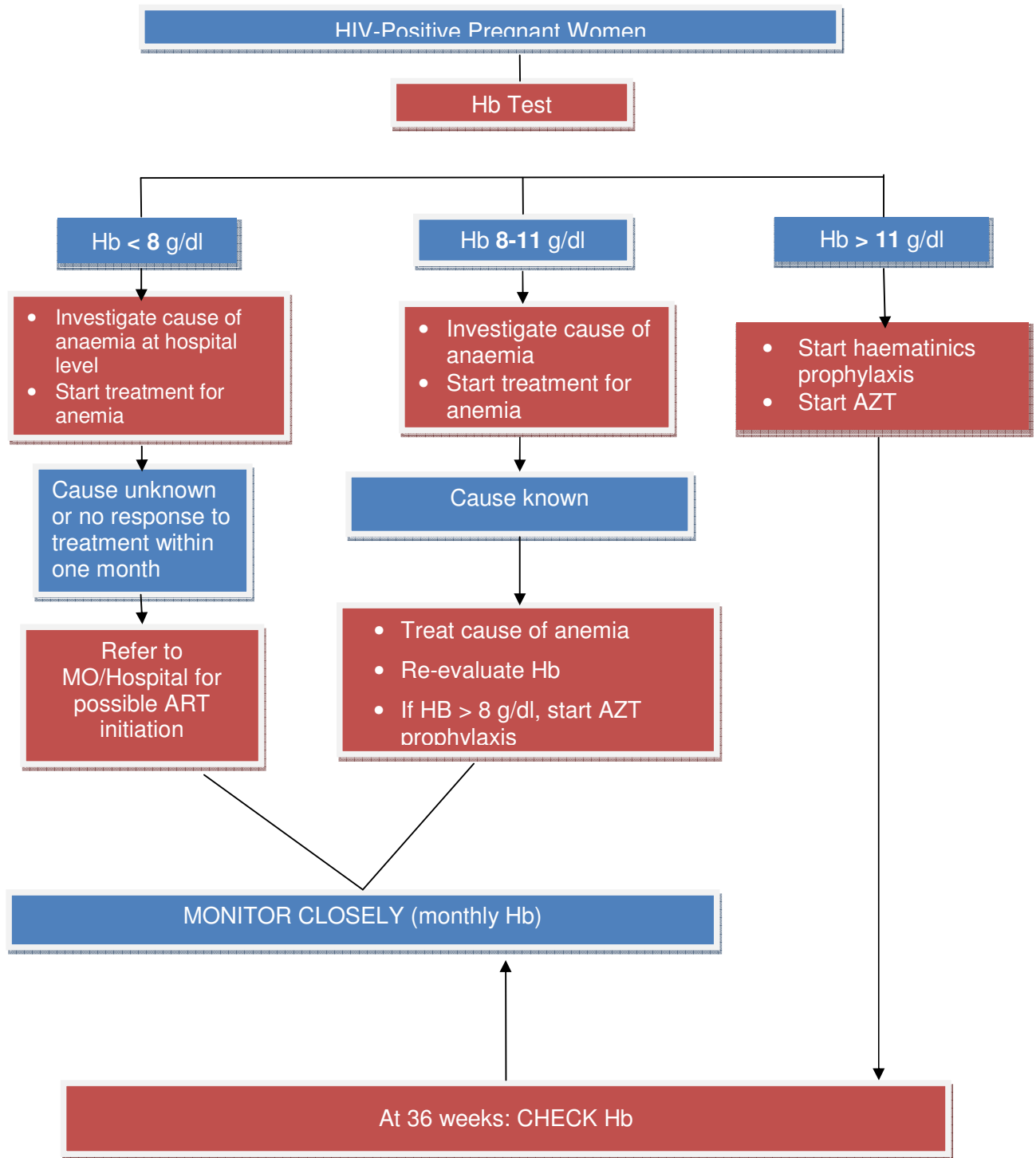
#### Baseline assessment for pregnant women eligible for ARV prophylaxis:

Anaemia is common during pregnancy and can be aggravated by HIV infection. Before initiating a prophylaxis regimen that contains AZT, women should be screened for anaemia. If the haemoglobin is below 8 g/dl, the cause of anaemia should be investigated at hospital level, including ruling out intestinal worms (particularly hook worms). The anaemia should first be treated (with iron and folic acid) and initiation of AZT prophylaxis should be delayed. Severe unexplained anaemia (normochromic, normocytic) is a WHO clinical stage 3 condition and warrants immediate initiation on ART (particularly for women already in the third trimester).

If haemoglobin testing is not readily available, any of the following clinical signs and/or symptoms (pallor, extreme fatigue, breathlessness, tachycardia) should be used to screen for severe anaemia. If any of the above signs/symptoms are present, the mother should be initiated on treatment for anaemia and referred for further investigations and management.

All women on AZT should have Hb repeated at every ANC visit.

**Figure 7: Baseline Haemoglobin Screening and Monitoring of Women on AZT-based Prophylaxis**



## SECTION 5.4: ANTERETROVIRAL TREATMENT (ART) REGIMENS (CD4 ≤ 350)

HIV infected women with CD4 cell count ≤ 350 or in clinical stage 3 or 4 should be initiated on ART promptly and managed at MCH. The length of time that a woman receives ART before delivery is directly related to the risk of HIV transmission to the infant; therefore ART should be initiated as soon as possible in eligible women to minimize the risk of transmission to the infant. Maternal mortality can also be reduced if women in advanced stages of the disease start their treatment early, irrespective of gestational age, and continue throughout pregnancy, delivery and thereafter. Table 9 below summarizes the recommended treatment regimens for women eligible for ART (and prophylaxis regimens for their infants).

Before initiation of ART, women should undergo adherence education and counselling as adherence to ART is critical for improving clinical, immunological and virological outcome. Please refer to the National Antiretroviral Treatment Guidelines for more information.

**Table 9: Recommended ART Regimens for Mothers and ARV Prophylaxis Regimens for their Infants**

<b>ART regimens for women seen during pregnancy</b>				
<b>COURSE</b>	<b>ANTENATAL (MOTHER)</b>	<b>INTRAPARTUM (MOTHER)</b>	<b>POSTPARTUM (MOTHER)</b>	<b>POSTNATAL (INFANT)</b>
<u>Preferred Regimen</u> Zidovudine (AZT) Lamivudine (3TC) Efavirenz (EFV)	As soon as possible after CD4 result  AZT 300 mg BD 3TC 150 mg BD EFV 600 mg OD	Continue Antenatal ART regimen	Continue Antenatal ART regimen	Nevirapine syrup 1.5ml immediately after birth (or as soon as possible) and continue until 6 weeks of age
If still in first trimester**:  Zidovudine (AZT) Lamivudine (3TC) Nevirapine (NVP)* • If CD4 250-350, monitor ALT monthly due to risk of hepatotoxicity	AZT 300 mg BD 3TC 150 mg BD NVP 200 mg OD x 2 weeks, then BD thereafter	Continue Antenatal ART regimen	Continue Antenatal ART regimen	Nevirapine syrup 1.5ml immediately after birth (or as soon as possible) and continue until 6 weeks of age
<b>ALTERNATIVE REGIMENS</b>				
<u>If Hb &lt; 8g/dl</u>  Tenofovir Lamivudine (3TC) Efavirenz (EFV) (or Nevirapine if still in the first trimester)	TDF 300 mg OD + 3TC 300 mg OD + EFV 600 mg OD (or NVP 200mg OD x 2 weeks, then BD thereafter if still in 1 <sup>st</sup> trimester)	Continue Antenatal ART regimen	Continue Antenatal ART regimen	Nevirapine syrup 1.5ml immediately after birth (or as soon as possible) and continue until 6 weeks of age

<u>If on TB treatment</u>				
Tenofovir Lamivudine (3TC) Efavirenz (EFV)  (or Nevirapine if still in the first trimester)	TDF 300 mg OD + 3TC 300 mg OD + EFV 600 mg OD (or NVP 200mg OD x 2 weeks, then BD thereafter if still in 1 <sup>st</sup> trimester)	Continue Antenatal ART regimen	Continue Antenatal ART regimen	Nevirapine syrup 1.5ml immediately after birth (or as soon as possible) and continue until 6 weeks of age

\* There is a risk of severe hepatotoxicity with NVP if used in women with CD4 250-350; Efavirenz (EFV) should be substituted for NVP if beyond the first trimester

\*\* Efavirenz (EFV) should not be used in the first trimester due to the increased risk of teratogenic effects on the infant

- Women who become pregnant while already on a regimen containing TDF should continue.
- Women co-infected with hepatitis B should be initiated on regimens containing TDF and 3TC.

When to refer to Medical Officer or hospital-level ART clinic:

- If CD4 is 250-350 and still in 1<sup>st</sup> trimester, NVP should be used with close monitoring of liver enzymes (monthly ALT). Refer immediately if liver enzymes are elevated or if regular access to liver enzyme testing is not available.
- Women with Hb less than 8g/dl despite appropriate investigations and treatment at health centre level should be referred for further management by a Medical Officer or at hospital level.
- Women with clinical signs and/or symptoms of severe anaemia (pallor, extreme fatigue, breathlessness, tachycardia) should be initiated on treatment for anaemia and referred for further investigations and management.

For women already on ART who become pregnant:

If a woman becomes pregnant while on ART, her regimen should be continued. If d4T is part of the drug combination, she should be switched to AZT. If AZT is contraindicated, TDF should be used (if possible). The infant should receive Nevirapine prophylaxis for 6 weeks, as described in Chapter 4.

A woman on an EFV-containing regimen who becomes pregnant should switch to NVP if she is still in the first trimester. If the pregnancy is discovered after the first trimester, there is no need for the switch, and she can continue on the EFV-based regimen.

**SECTION 5.5: BASELINE ASSESSMENT FOR PREGNANT WOMEN ELIGIBLE FOR ART**

The baseline assessment for women eligible for ART includes full blood count, liver function tests (LFTs), kidney function tests (urea and creatinine) and serological tests for Hepatitis B (if LFTs are elevated). Anaemia is not a contraindication to

initiating ART but for women with severe anaemia (haemoglobin < 8 g/dl), AZT should be replaced by TDF. Renal function should then be monitored by clinical signs and symptoms and/or serum creatinine every six months. Refer to national ART guidelines for further information.

## **SECTION 5.6: MONITORING PREGNANT WOMEN ON ART**

Both clinical and laboratory monitoring should be used after initiation of ART and for all women on ART. Monitoring will help to:

- Manage possible side effects early before they become serious
- Assess the efficacy of treatment
- Detect problems with adherence and/or identify treatment failure

### Section 5.6.1: Clinical Monitoring

After initiating ART, clinical assessments should take place at 2 weeks, 1 month, 2 months, 3 months, 6 months and at least every 6 months thereafter. In addition to assessments conducted during ANC visits, review should focus on:

- Side effects
- Adherence and dosing
- Other medications that may interact with ARVs

### Section 5.6.2: Laboratory Monitoring

CD4 should be checked every 6 months to help determine the efficacy of treatment. Creatinine should be checked every 6 months for all patients on TDF. For all women on AZT-based regimens, Hb should be checked monthly during pregnancy. For women on NVP based regimens, ALT should be checked at 1 month, 2 months, 6 months and every 6 months thereafter (or monthly if CD4 is 250-350). Please refer to the National Antiretroviral Treatment Guidelines for more details.



## **CHAPTER SIX: CARE OF THE EXPOSED INFANT**

### **SECTION 6.1: INTRODUCTION**

An exposed infant is identified by writing this information in the Child Health Care Card. The Child Health Card is given to the mother during ANC services and an indication of the exposure status of the infant can be reported in it even before delivery. The HIV exposure status is reported in the birth summary by noting the mother's HTC result and recording on the follow-up page - "exposed infant: Y N".

HIV infected infants have a poor prognosis if not diagnosed early and initiated on treatment immediately. Untreated, up to 50% of HIV infected infants will die before 2 years of age. Therefore, it is extremely important that exposed infants are followed up closely, monitored for normal growth, development, and general health, and receive co-trimoxazole prophylaxis (see table 11) and the appropriate ARV prophylaxis to prevent MTCT (see section 6.3 and table 12). Any signs of HIV infection should be considered seriously and proper care and treatment administered to the infant immediately. DNA PCR testing for early infant diagnosis should be performed to allow for appropriate follow-up, treatment decisions, initiation of ART as soon as possible since all HIV infected children  $\leq 2$  years are eligible for ART regardless of clinical or immunological stage..

### **SECTION 6.2: HIV TESTING AND COUNSELLING FOR INFANTS AND YOUNG CHILDREN**

The diagnosis of HIV in infants is challenging because they may carry maternal antibodies which have crossed the placenta during pregnancy. Thus, antibody tests are inconclusive during the first months of life, since any antibody detected may belong to the mother and not the infant. Infants who have received maternal HIV-specific antibodies may test positive on an antibody-based test (rapid test or ELISA), despite being HIV uninfected. By the age of 9 months, the majority of infants (93%) no longer have any detectable maternal antibody, though some infants may carry some maternal antibody until the age of 18 months.

The HIV exposure status of all infants attending under-5 clinic should be known in order to diagnose HIV infection as early as possible. To determine the exposure status, the mother should be tested for HIV. The positive test result of the mother is enough to consider an infant as exposed.

If the mother's status is unknown (e.g. she is unavailable or refuses HIV testing), the infant should be tested with an antibody test to determine exposure status. If the result is positive, the infant is exposed and should be followed-up as explained in Section 6.3 below. If the antibody test is negative, the infant may still be exposed but does not carry maternal antibody. The antibody test should be repeated 6 weeks after the end of exposure or earlier if the child is sick.

In order to definitively determine HIV status in young infants, a direct (virological) test, such as DNA PCR, is required. Every infant born to an HIV positive mother should receive a DNA PCR test to determine their HIV status at birth (this is performed at 6 weeks of age). A serological (rapid, or antibody-based) test is then

performed at 9 months of age, followed by a second antibody test six weeks after the cessation of all breast feeding (currently recommended at 12 months of age). All positive antibody tests should be followed immediately by a DNA PCR test to determine whether the HIV-specific antibodies which have been detected belong to the infant or to the mother. In addition, all exposed infants (whether infected or uninfected) should have a final confirmatory antibody test at 18 months of age to confirm their HIV status.

After 18 months of age, children do not carry maternal antibodies anymore. Testing should be carried out using the testing algorithm as for adults. Children of 18 months or older who are still breastfeeding (or in the window period following exposure through breastfeeding) need to be tested with antibody tests 6 weeks after the end of the exposure (or earlier if they are sick).

#### Section 6.2.1: Special considerations for counselling for HIV testing of infants and young children

- Counselling must be provided to each child's parent or caregiver; if the mother (or parent) is not available, the guardian can consent for HIV testing of the child (see HTC guidelines for further guidance).
- Counselling should include, in addition to standard pre-test and post-test counselling (see chapter 3), the following issues:
  - Reasons why HIV testing and counselling is being recommended
  - The benefits of early infant diagnosis of HIV
  - Risks of mother to child transmission of HIV, and measures that can be taken to reduce those risks if the infant is still exposed (e.g. safer infant feeding practices)
  - DNA PCR testing procedures and turn-around time for test results
  - Recommended follow-up of exposed infants
  - Services that are available in the event of an HIV positive or negative result, including antiretroviral therapy and its indications
- Issues concerning disclosure, particularly in older children, must be considered early
- As much as possible, children should be included in the counselling and provided with age appropriate information regarding HIV testing

Please see Figures 8, 9, and 10 for algorithms further describing the procedure for diagnosis of HIV in infants in Lesotho.

### **SECTION 6.3: ROUTINE CARE FOR EXPOSED INFANTS**

#### Prophylaxis

- **ARV prophylaxis** (daily NVP) should be provided to the exposed infant, depending on the breastfeeding practice and whether the mother is on ART (see Table 12 below for NVP dosing).

- All exposed infants whose mothers are on ART should receive daily NVP from birth (or as soon as possible thereafter) until 6 weeks of age.
  - All breastfeeding exposed infants whose mothers are not on ART should receive daily NVP from birth (or as soon as possible thereafter) until 1 week after all exposure to breast milk has ended.
    - Infant NVP prophylaxis may be initiated at any age, provided the infant is still breastfeeding.
  - All non-breastfeeding infants should receive daily NVP from birth (or as soon as possible thereafter) until 6 weeks of age
- **Co-trimoxazole prophylaxis** should be provided to all exposed infants from 4-6 weeks of age, according to the ART guidelines, and continued until HIV infection has been definitively excluded (see Table 11 below for dosing)

### Routine Care

- Immunizations should be administered as per the MOHSW guidelines;
  - Note that BCG vaccination is contraindicated in known HIV infected infants only; exposed infants without signs or symptoms of HIV infection may still receive the vaccine (see Lesotho ART guidelines for further details)
- Vitamin A supplementation should be given to the infant as per the MOHSW guidelines
- Routine de-worming should be provided as per the MOHSW guidelines.
- Growth monitoring should be done as usual up to 5 years of age, according to MOHSW guidelines
  - Special attention should be paid to children who exhibit a slowing of growth or continued growth below the 3rd percentile, as HIV infected children are at high risk of poor growth; this may be an early sign of disease and an indication for initiating ART
- Health workers are encouraged to use the Integrated Management of Childhood Illnesses (IMCI) guidelines which have been shown to improve diagnosis and reduce morbidity and mortality.
- Screening clinical examination should be performed routinely for all exposed infants and infants of unknown status to assess for signs of illness. The most common signs of HIV disease in infants are:
  - Recurrent or persistent oral thrush
  - Persistent lymphadenopathy
  - TB (chronic cough not responding to antibiotic treatment, loss of weight and chronic fever)
- Any infant presenting with the above signs should be assessed for HIV infection (by laboratory or clinical diagnosis) and referred immediately for ART initiation and further management if appropriate

**Table 10: Schedule of monitoring visits for HIV exposed infants**

<b>Age</b>	<b>Services to be provided</b>
7 days	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Infant feeding counselling and support</li> <li>▪ Ensure that infant ARV prophylaxis (daily NVP) is being provided (for all infants)</li> </ul>
6 weeks	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Infant feeding counselling and support</li> <li>▪ Provide immunizations</li> <li>▪ Monitor growth and development</li> <li>▪ Send dried blood spot (DBS) for 1<sup>st</sup> DNA PCR test</li> <li>▪ Initiate co-trimoxazole prophylaxis</li> <li>▪ Continue infant ARV prophylaxis (daily NVP) for breastfeeding infants whose mothers are not receiving ART (or initiate if not already prescribed)</li> <li>▪ Stop infant ARV prophylaxis (daily NVP) for non-breastfeeding infants and those whose mothers are on ART</li> </ul>
10 weeks	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Infant feeding counselling and support</li> <li>▪ Monitor growth and development</li> <li>▪ Provide immunizations</li> <li>▪ Provide DNA PCR result to the caregiver, if not done already               <ul style="list-style-type: none"> <li>○ If DNA PCR is positive, stop daily NVP, send 2<sup>nd</sup> DBS specimen for DNA PCR testing, and refer immediately for initiation of ART and further management</li> <li>○ If DNA PCR result is negative, continue infant ARV prophylaxis (daily NVP) for breastfeeding infants whose mothers are not receiving ART</li> </ul> </li> <li>▪ Continue co-trimoxazole prophylaxis</li> <li>▪ Continue NVP prophylaxis as appropriate</li> </ul>
14 weeks	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Infant feeding counselling and support</li> <li>▪ Monitor growth and development</li> <li>▪ Provide immunizations</li> <li>▪ Provide DNA PCR result to the caregiver, if not done already               <ul style="list-style-type: none"> <li>○ If DNA PCR is positive, stop daily NVP, send 2<sup>nd</sup> DBS specimen for DNA PCR testing, and refer immediately for initiation of ART and further management</li> <li>○ If DNA PCR result is negative, continue infant ARV prophylaxis (daily NVP) for breastfeeding infants whose mothers are not receiving ART</li> </ul> </li> <li>▪ Continue co-trimoxazole prophylaxis</li> <li>▪ Continue NVP prophylaxis as appropriate</li> </ul>
Monthly visits until 12 months of age	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Infant feeding counselling and support</li> <li>▪ Monitor growth and development</li> <li>▪ Provide immunizations, vitamin A, and routine de-worming as per MOHSW guidelines</li> <li>▪ Continue co-trimoxazole</li> <li>▪ Continue NVP prophylaxis for breastfeeding infants</li> </ul>

Age	Services to be provided
In addition to the above, specific visits (after age 14 weeks) should proceed as follows:	
6 months	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Infant feeding counselling and support – discuss the addition of complementary foods for all infants</li> <li>▪ Monitor growth and development</li> <li>▪ Provide immunizations</li> <li>▪ Continue co-trimoxazole prophylaxis</li> </ul>
9 months	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Infant feeding counselling and support</li> <li>▪ Monitor growth and development</li> <li>▪ Provide immunizations</li> <li>▪ Continue co-trimoxazole prophylaxis</li> <li>▪ Rapid test the infant               <ul style="list-style-type: none"> <li>○ If positive (or indeterminate), send DNA PCR to determine infection status; continue daily co-trimoxazole and NVP while awaiting results; refer immediately for ART initiation if DNA PCR is positive</li> <li>○ If negative, continue routine care, co-trimoxazole, and NVP prophylaxis if still breastfeeding</li> </ul> </li> </ul>
12 months	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Infant feeding counselling and support – discuss cessation of breastfeeding if a nutritionally adequate and suitable diet can be provided without breast milk (see Chapter 7 for details)</li> <li>▪ Continue infant ARV prophylaxis (daily NVP) until one week after cessation of all breastfeeding</li> <li>▪ Monitor growth and development</li> <li>▪ Continue co-trimoxazole prophylaxis</li> <li>▪ Provide immunizations, vitamin A supplementation, and routine de-worming as per MOHSW guidelines</li> </ul>
6 weeks after cessation of all breast feeding	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Ensure that infant ARV prophylaxis (daily NVP) has stopped for breastfeeding infants</li> <li>▪ Rapid test the infant               <ul style="list-style-type: none"> <li>○ If positive (or indeterminate), send DNA PCR to determine infection status; continue daily co-trimoxazole while awaiting results; refer immediately for ART initiation if DNA PCR is positive</li> <li>○ If negative, infant is uninfected; stop co-trimoxazole</li> </ul> </li> </ul>
Routine visits every 2-3 months (after age 12 months)	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Provide most recent DNA PCR result to the caregiver, if appropriate</li> <li>▪ Monitor growth and development</li> <li>▪ Continue co-trimoxazole prophylaxis if definitive HIV status has not yet been determined               <ul style="list-style-type: none"> <li>○ Stop co-trimoxazole once a definitive diagnosis of HIV infection has been excluded</li> </ul> </li> <li>▪ Continue daily NVP prophylaxis if still breastfeeding</li> <li>▪ Provide immunizations, vitamin A supplementation, and routine de-worming as per MOHSW guidelines</li> </ul>

Age	Services to be provided
18 months	<ul style="list-style-type: none"> <li>▪ Clinical monitoring (thorough history and physical exam)</li> <li>▪ Provide immunizations</li> <li>▪ HIV rapid test to confirm HIV status (whether the infant is known to be infected or uninfected)</li> <li>▪ Stop co-trimoxazole once a definitive diagnosis of HIV infection has been excluded</li> </ul>

Those infants diagnosed with HIV infection (or with a high likelihood of HIV infection based on clinical and immunological criteria) should continue co-trimoxazole and be referred for further care and treatment, including clinical and immunological staging (CD4 cell count and percentage), baseline laboratory investigations, assessment and treatment of opportunistic infections, and immediate initiation of antiretroviral therapy (see National ART Guidelines for further details).

**Table 11: Recommended doses of Co-trimoxazole prophylaxis for infants and young children**

	40mg TMP / 200mg SMZ per 5ml suspension	Single-strength (80mg TMP / 400mg SMZ) tabs
6 weeks to 6 months	2.5 ml	¼ tablet
6 months to 5 years	5 ml	½ tablet

Co-trimoxazole prophylaxis should be initiated at 6 weeks of age for all HIV exposed infants and continued until a diagnosis of HIV infection has been definitively excluded.

**Table 12. Recommended Dose of NVP Prophylaxis For Exposed Infants**

Infant Age	NVP Daily Dose
Birth to 6 weeks <ul style="list-style-type: none"> <li>• Weight &lt; 2kg</li> <li>• Weight 2-2.49kg</li> <li>• Weight ≥ 2.5kg</li> </ul>	consult paediatric HIV specialist 1 ml 1.5 ml
≥ 6 weeks to 6 months	2 ml
≥ 6 months to 9 months	3 ml
≥ 9 months to end of breastfeeding	4 ml

## SECTION 6.4: SPECIAL CARE FOR EXPOSED INFANTS

- HIV infected children are at high risk of developing recurrent infectious diseases. Regular clinical monitoring of exposed infants is important for timely initiation of ART.
- If DNA PCR testing is not readily available (or while awaiting the results of DNA PCR testing for definitive diagnosis of HIV), clinical criteria for the presumptive diagnosis of severe HIV disease may be used to determine eligibility and initiate ART, if necessary (see Table 13 below).
  - Infants qualifying for a presumptive diagnosis of severe HIV disease using these criteria should be referred for immediate ART initiation, without awaiting results of confirmatory testing
- Delay in developmental milestones is typical of HIV infection in children. At every visit, development of exposed children should be monitored following the developmental milestone chart (see Table 14). Any delay in milestones or developmental “red flags” (see Table 15), should be considered a sign of progression of HIV infection and urgent initiation of ART according to the treatment guidelines should be considered.

**Table 13: Presumptive Clinical Diagnosis of Severe (Stage 4) HIV Disease**

<b>Presumptive Diagnosis of Severe (Stage 4) HIV Disease in Children Younger Than 18 Months of Age</b>
<p>A presumptive diagnosis of severe HIV disease should be made if:</p> <ul style="list-style-type: none"> <li>• The infant is confirmed HIV antibody positive; <i>and</i></li> <li>• Diagnosis of any AIDS-indicator condition(s) can be made; <i>or</i></li> <li>• The infant is symptomatic with <u>two or more</u> of the following:           <ul style="list-style-type: none"> <li>▪ Oral thrush<sup>a</sup></li> <li>▪ Severe pneumonia<sup>b</sup></li> <li>▪ Severe sepsis<sup>c</sup></li> </ul> </li> </ul> <p>Other factors that support the diagnosis of severe HIV disease in an HIV seropositive infant include:</p> <ul style="list-style-type: none"> <li>• Recent HIV-related maternal death; <i>or</i> advanced HIV disease in the mother</li> <li>• CD4 &lt; 20% in infant</li> </ul> <p>Confirmation of the diagnosis of HIV infection should be sought as soon as possible</p>
<p>IMCI definitions:</p> <p><u>a. Oral thrush</u>: Creamy white to yellow soft small plaques on red or normally coloured mucosa which cannot easily be scraped off (pseudomembranous), or red patches on tongue, palate or lining of mouth, usually painful or tender.</p> <p><u>b. Severe pneumonia</u>: Cough or difficult breathing in a child with chest indrawing, stridor or any of the IMCI general danger signs (i.e., lethargic or unconscious, not able to drink or breastfeed, vomiting, and presence or history of convulsions during current illness); responding to antibiotics</p> <p><u>c. Severe sepsis</u>: Fever or low body temperature in a young infant with any severe sign such as fast breathing, chest indrawing, bulging fontanelle, lethargy, reduced movement, not feeding or sucking breast milk, convulsions</p>

**Table 14: Developmental Milestones in Children**

<b>Age</b>	<b>Psychosocial</b>	<b>Gross Motor</b>	<b>Fine Motor / Visual</b>	<b>Communication / Hearing</b>
1 month	<ul style="list-style-type: none"> <li>follows faces to the midline</li> </ul>	<ul style="list-style-type: none"> <li>moves all extremities equally</li> <li>lifts head when lying on stomach</li> </ul>	<ul style="list-style-type: none"> <li>opens hands spontaneously</li> </ul>	<ul style="list-style-type: none"> <li>startled by loud sounds</li> <li>cries</li> <li>quiets when fed and comforted</li> </ul>
2 months	<ul style="list-style-type: none"> <li>follows faces past midline</li> <li>smiles responsively</li> </ul>	<ul style="list-style-type: none"> <li>lifts head up 45 degrees when on stomach</li> </ul>	<ul style="list-style-type: none"> <li>looks at own hand</li> </ul>	<ul style="list-style-type: none"> <li>makes baby sounds (cooing, squealing, gurgling)</li> </ul>
3 months	<ul style="list-style-type: none"> <li>recognizes mother</li> <li>smiles responsively</li> </ul>	<ul style="list-style-type: none"> <li>supports head for a few seconds when held upright</li> </ul>	<ul style="list-style-type: none"> <li>opens hands frequently</li> </ul>	<ul style="list-style-type: none"> <li>responds to voices</li> <li>laughs</li> </ul>
4 months	<ul style="list-style-type: none"> <li>follows an object with eyes for 180 degrees</li> <li>regards own hand</li> <li>anticipates food on sight</li> </ul>	<ul style="list-style-type: none"> <li>bears weight on legs</li> <li>good neck control when pulled to sitting</li> <li>lifts chest and supports self on elbows when pulled to sit</li> </ul>	<ul style="list-style-type: none"> <li>brings hands together in midline (clasps hands)</li> <li>grabs an object (such as a rattle)</li> <li>reaches for objects</li> </ul>	<ul style="list-style-type: none"> <li>turns head to sound</li> </ul>
6 months	<ul style="list-style-type: none"> <li>reaches for familiar people</li> </ul>	<ul style="list-style-type: none"> <li>rolls from stomach to back or back to stomach</li> <li>sits with anterior support</li> </ul>	<ul style="list-style-type: none"> <li>plays with hands by touching them together</li> <li>sees small objects such as crumbs</li> </ul>	<ul style="list-style-type: none"> <li>responds to name</li> <li>babbles</li> </ul>
9 months	<ul style="list-style-type: none"> <li>indicates wants/desires</li> <li>waves bye-bye</li> <li>stranger anxiety</li> </ul>	<ul style="list-style-type: none"> <li>can sit without support</li> <li>creeps or crawls on hands and knees</li> </ul>	<ul style="list-style-type: none"> <li>looks for a toy when it falls from his/her hand</li> <li>takes a toy in each hand</li> <li>transfers a toy from one hand to the other</li> </ul>	<ul style="list-style-type: none"> <li>responds to soft sounds such as whispers</li> </ul>
12 months	<ul style="list-style-type: none"> <li>has separation anxiety</li> <li>social interactions</li> <li>intentional and goal-directed</li> </ul>	<ul style="list-style-type: none"> <li>pulls self up to standing position</li> <li>walks with support</li> </ul>	<ul style="list-style-type: none"> <li>points at objects with index finger</li> </ul>	<ul style="list-style-type: none"> <li>says at least one word</li> <li>makes "ma-ma" or "da-da" sounds</li> <li>locates sounds by turning head</li> </ul>
15 months	<ul style="list-style-type: none"> <li>imitates activities</li> <li>finds a nearby hidden object</li> </ul>	<ul style="list-style-type: none"> <li>can take steps by himself</li> <li>can get to a sitting position from a lying position</li> </ul>	<ul style="list-style-type: none"> <li>can stack one cube on top of another</li> </ul>	<ul style="list-style-type: none"> <li>able to say mama and dada to respective parents</li> </ul>
18 months	<ul style="list-style-type: none"> <li>initiates interactions by calling to adult</li> </ul>	<ul style="list-style-type: none"> <li>walks without help</li> </ul>	<ul style="list-style-type: none"> <li>takes off own shoes</li> <li>feeds self</li> </ul>	<ul style="list-style-type: none"> <li>says at least 3 words</li> </ul>
2 years	<ul style="list-style-type: none"> <li>does things to please others</li> </ul>	<ul style="list-style-type: none"> <li>runs without falling</li> </ul>	<ul style="list-style-type: none"> <li>looks at pictures in a book</li> </ul>	<ul style="list-style-type: none"> <li>combines two different words</li> </ul>

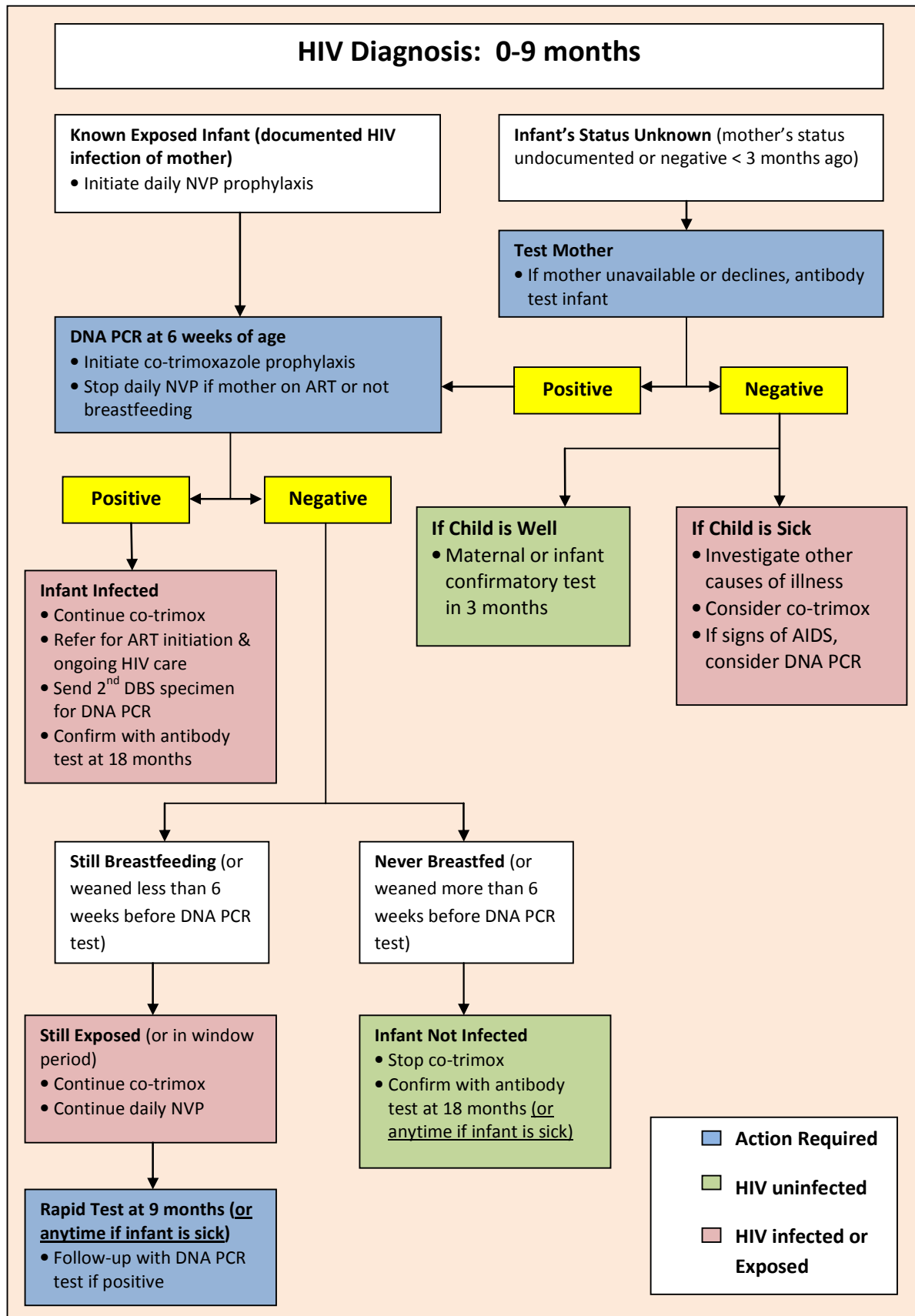


	• parallel (imitative) play		• imitates drawing a vertical line	
--	-----------------------------	--	------------------------------------	--

**Table 15: Developmental Red Flags**

<b>Age</b>	<b>Red Flags</b>
Birth to 3 months	failure to alert to environmental stimuli rolling over before 2 months (hypertonia) persistent fisting at 3 months
4 to 6 months	poor head control failure to smile failure to reach for objects by 5 months
6 to 12 months	no baby sounds or babbling inability to localize sounds by 10 months
12 to 24 months	lack of consonant production hand dominance prior to 18 months (contra lateral weakness) no imitation of speech and activities by 16 months
Any age	loss of previously attained milestones

**Figure 8: HIV Diagnosis: 0-9 Months of Age**



**Figure 9: HIV Diagnosis: 10-18 Months of Age**

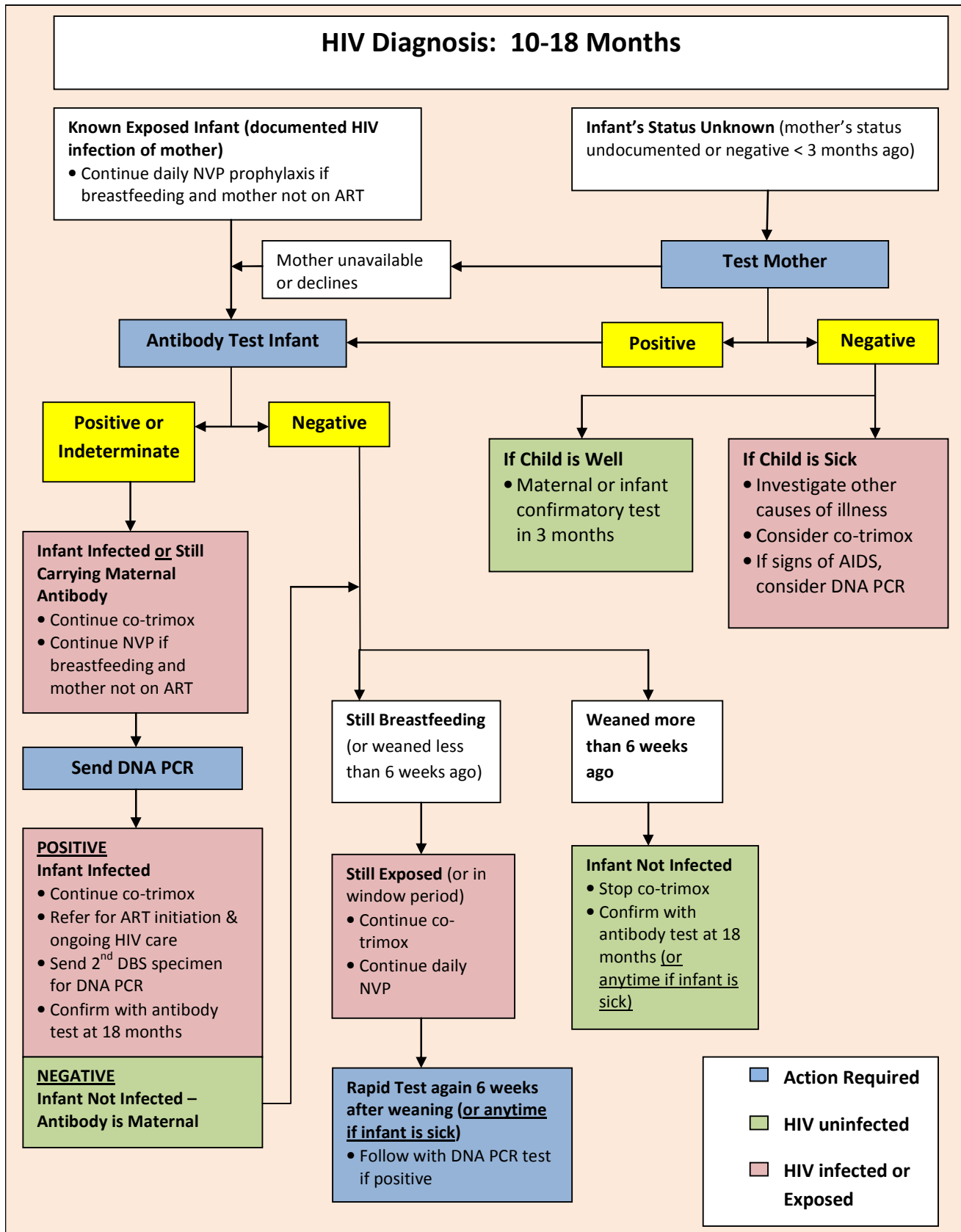
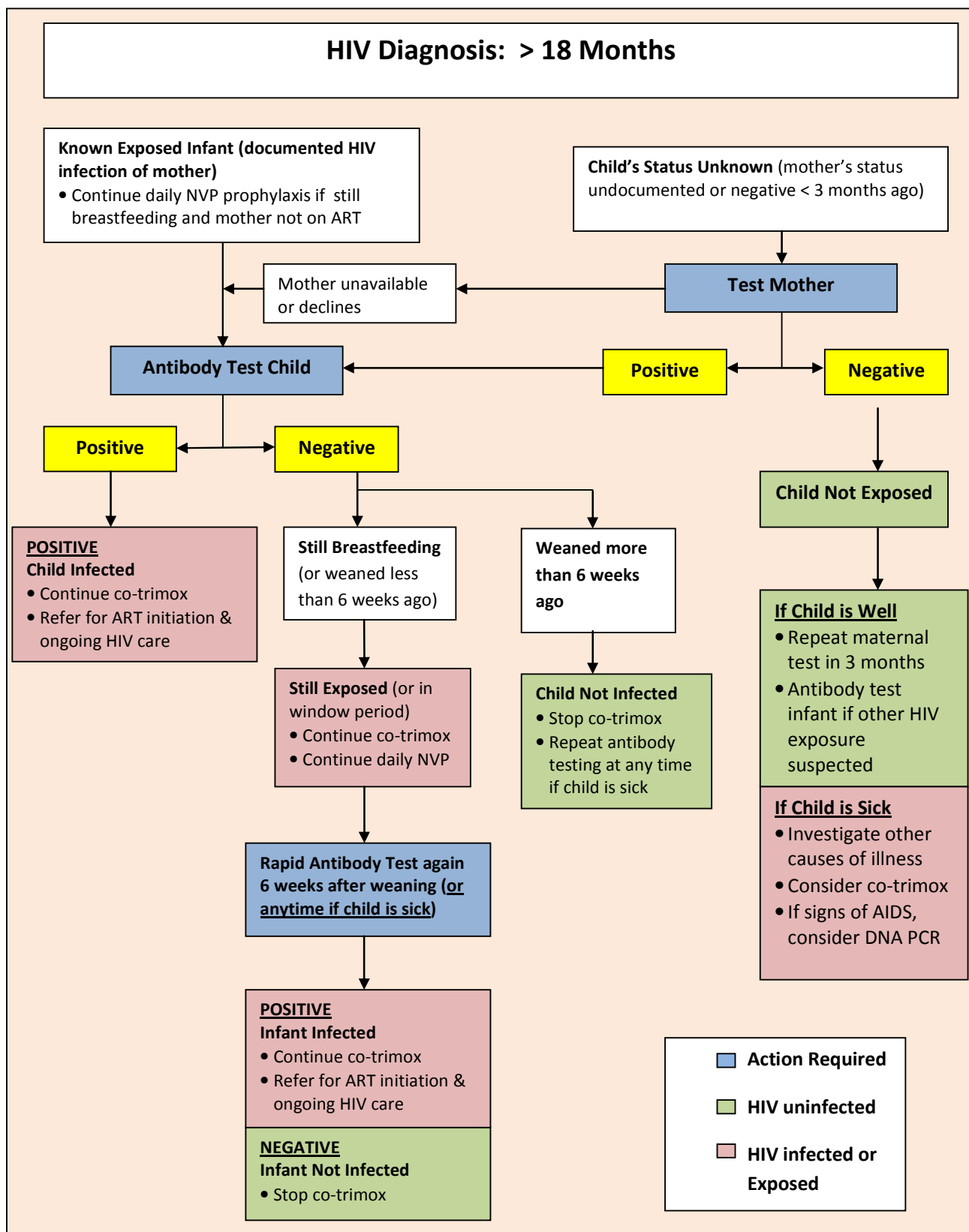


Figure 10: HIV Diagnosis: > 18 Months of Age



## **CHAPTER SEVEN: INFANT FEEDING AND MATERNAL NUTRITION IN THE CONTEXT OF PMTCT**

### **SECTION 7.1: INTRODUCTION**

The nutrition of children is of such importance that it is one of the key elements of the child's rights to health as defined in the Convention on the Rights of the Child. All children have the right to adequate nutrition and access to safe and nutritious food. Safe Infant feeding practices can reduce the likelihood of MTCT and the risk of infant death from malnutrition and other childhood infections. Furthermore, women have the right to full information in order to decide how to feed their children, and to appropriate conditions that support their decision. Infant feeding counselling should begin during pregnancy to enable HIV positive pregnant or newly-delivered women to make informed infant feeding decisions.

Every mother who is HIV positive should receive counselling which includes general information about the risks and benefits of the various infant feeding options and specific guidance on selecting the option most likely to be suitable for her particular situation, including her health status and home environment. Guidance provided by health workers should also consider the health services available and the counselling and support she is likely to receive.

#### Section 7.1.1: Key Principles

There are several key principles or values which form the basis of the Government of Lesotho's current recommendations on infant feeding in the context of HIV.

#### **1. Balancing HIV prevention with protection from other causes of child mortality**

- Prioritizing the prevention of HIV transmission must be balanced with meeting the nutritional requirements and protection of infants against non-HIV morbidity and mortality (in particular, malnutrition and serious illnesses such as diarrhoea among non-breastfed infants).

#### **2. Integrating HIV interventions into maternal and child health services**

- This includes access to CD4 count testing and appropriate antiretroviral therapy or prophylaxis for the woman's health and to prevent MTCT of HIV.

#### **3. Setting national recommendations for infant feeding in the context of HIV**

- As stated above, each HIV infected mother has the right to receive full information to decide how to feed her child, and should be assisted to select the infant feeding option which is most suitable to her situation. However, health authorities will decide whether to principally counsel and support these mothers to breastfeed and receive ARV intervention or to avoid all breastfeeding as the strategy that will mostly likely give infants the greatest chance of HIV-free survival.

**4. Informing mothers known to be HIV infected about infant feeding alternatives**

- Mothers should be informed of the infant feeding strategy recommended by the Ministry of Health and Social Welfare, but should also be informed of the alternatives that they might wish to adopt.

**5. Providing services to specifically support mothers to appropriately feed their infants**

- This includes skilled counselling and support in appropriate infant feeding practices, which should be available to all pregnant women and mothers.

**6. Avoiding harm to infant feeding practices in the general population**

- Optimal breastfeeding practices among the general population should not be undermined.

**7. Advising mothers who are HIV uninfected or whose HIV status is unknown**

- These mothers should be counselled to exclusively breastfeed for the first 6 months, then introduce complementary foods while continuing to breastfeed for 24 months or beyond.
- Mothers whose status is unknown should be offered HIV testing; mothers who are HIV uninfected should be counselled about ways to prevent HIV infection and about the services that are available to help them remain uninfected.

**8. Investing in improvements in infant feeding practices in the context of HIV**

- Government will continue to invest in improvements in infant feeding strategies in order to most effectively prevent postnatal HIV infections and improve HIV-free survival.

**SECTION 7.2: INFANT FEEDING FROM ZERO TO SIX MONTHS OF AGE**

- Exclusive breastfeeding is recommended for the first six months of life.
- During this time, antiretrovirals should be provided to HIV exposed infants to further reduce the risk of HIV transmission. These should include **either**:
  - For mothers receiving ART for their own health: daily Nevirapine (NVP) provided to the infant from birth until 6 weeks of age
  - or**:
  - For mothers who received ARV prophylaxis for PMTCT: daily NVP provided to the infant from birth until one week after all exposure to breast milk has ended (or until 6 weeks if not breastfeeding).
- Replacement feeding (with commercial infant formula) should only be given to HIV exposed infants if **all** of the following conditions are met (*referred to as AFASS in previous guidelines*):
  - Safe water and sanitation can be assured at the household level and in the community; **and**

- The mother, or other caregiver, can reliably provide sufficient infant formula milk to support normal growth and development of the infant; **and**
  - The mother or caregiver can prepare it cleanly and frequently enough so that it is safe and carries a low risk of diarrhoea and malnutrition; **and**
  - The mother or caregiver can, in the first six months, exclusively give infant formula milk; **and**
  - The family is supportive of this practice; **and**
  - The mother or caregiver can access health care that offers comprehensive child health services.
- Refer to Annex 6 for details on how to assess whether a mother meets the above conditions
  - Infants who are not breastfeeding should receive daily NVP from birth until six weeks of age.
  - All mothers should be counselled on management of breast conditions (e.g. nipple cracks, fissures, etc.) and breastfeeding difficulties.

HIV can be transmitted from the mother to the infant during breastfeeding. However, this risk can be reduced to a minimum by providing antiretrovirals to the mother and infant (as indicated above) and by feeding the baby exclusively with breast milk for the first 6 months. **This means that nothing else (i.e. water, porridge, etc.) should be given to the infant. Prescribed medications, however, may still be given.**

#### Section 7.2.1: Benefits of exclusive breastfeeding

- Breast milk provides complete nutrition for the infant for the first six months of life
- Colostrum, the milk produced during the first few days of the infant's life, is rich in vitamins, antibodies, and has other anti-infective properties
- Breast milk contains antibodies from the mother which are beneficial to the infant, as the infant's own immune system is not completely developed during the early months of life
- Breast milk provides vital protection against deadly childhood illnesses such as diarrhoea and respiratory infections
- Breast milk is easily digested and its composition changes to meet the developmental needs of the growing infant
- Breast milk contains enzymes that help digestion of fat
- Breast milk is natural and does not add extra cost
- Breastfeeding promotes bonding between mothers and their babies

- Breastfeeding helps the uterus to contract after delivery and reduces post-partum bleeding
- Breast milk is always available and no special preparation is needed

#### Section 7.2.2: Challenges of exclusive breastfeeding

- Exclusive breastfeeding can be difficult, particularly for mothers working outside the home
- It may be difficult to withstand family or community pressure to give the baby other liquids or foods
- The mother requires additional calories to support breast feeding

#### Section 7.2.3: Benefits of replacement feeding with commercial infant formula

- There is no risk of HIV infection to the baby
- Commercial infant formula contains most of the nutrients an infant needs
- Other people (besides the mother) can feed the infant

#### Section 7.2.4: Challenges of replacement feeding with commercial infant formula

- The infant does not benefit from the protective effects of colostrum
- Infant formula does not contain the antibodies found in breast milk
- There is an increased risk of diarrhoeal illnesses and respiratory infections, with an increased risk of mortality in younger infants
- There is an increased risk of malnutrition, due to inadequate supply of infant formula or inappropriate feeding
- Commercial infant formula is expensive (and a regular supply must be assured)
- Requires a regular supply of fuel and clean water for preparation
- Infant formula cannot be stored; it must be prepared fresh each time it is needed

Although exclusive breastfeeding is recommended for all HIV infected mothers for the first six months of life, each mother should be informed of all options available to her and taken through an assessment of her individual circumstances to identify the best infant feeding option. Whatever choice a mother makes, she should be supported with emphasis on the importance of exclusive practice of the option taken.

***Mothers should be warned against mixed feeding (breast milk plus other foods or liquids) during the first six months of life as this is associated with a higher risk of HIV transmission than breast feeding exclusively.***

***Mothers' CD4 cell counts should be monitored closely throughout the breastfeeding period. Those who qualify should be fast-tracked to receive ART as soon as possible, to reduce the risk of transmission of HIV to the infant during breastfeeding.***



### **SECTION 7.3: INFANT FEEDING FROM SIX TO TWELVE MONTHS OF AGE**

- Mothers known to be HIV infected (and whose infants are HIV uninfected or with unknown HIV status) should continue breastfeeding for the first 12 months of life.
  - Antiretrovirals should continue to be provided to either the mother (ART for her own health, if she qualifies for it), or the infant (daily NVP until one week after all exposure to breast milk has ended). This will help to reduce the risk of HIV transmission to the infant.
  - This approach allows infants to receive the maximum benefit of breastfeeding in terms of survival (related to non-HIV morbidity and mortality), and additional developmental and other health benefits.
- After six months of age, all infants should begin receiving complementary foods in addition to breast milk (or replacement milk, if the mother has chosen this feeding option). This is a high-risk time for all infants, as it is often associated with growth faltering, illness, and increased risk of malnutrition. HIV exposed infants must be monitored closely as they are at increased risk for these complications. Therefore, HIV infected mothers should receive regular support and counselling for appropriate complementary feeding.
- Health workers should promote and encourage responsive (active) feeding applying the principles of psychosocial care, as well as support the maintenance of food safety and hygiene to avoid food borne diseases. Where possible, food demonstrations should be used to introduce mothers to safe and nutritious meals for their infants. Guidance should focus on the quantity, quality, and frequency of feeding.

### **SECTION 7.4: INFANT FEEDING FROM TWELVE TO TWENTY-FOUR MONTHS OF AGE**

- After twelve months of age, breastfeeding for all infants should only stop once a nutritionally adequate and safe diet without breast milk can be provided to the infant.
  - Appropriate complementary foods should continue to be provided during this time.
- Studies indicate improved survival among HIV infected infants who are breastfed. Therefore, all infants determined to be definitively HIV infected should be breastfed exclusively for the first six months, and continue breastfeeding for as long as possible (up to two years and beyond), while receiving complementary foods.

### **SECTION 7.5: WHEN MOTHERS DECIDE TO STOP BREASTFEEDING**

- When mothers who are HIV-infected stop breastfeeding, they should do so gradually, within one month.

- **Stopping breastfeeding abruptly is not advisable.**
- ARV prophylaxis should continue (daily NVP) until at least one week after breastfeeding has fully stopped.
- If the infant is younger than 6 months of age when breastfeeding ceases:
  - Commercial infant formula milk should be provided exclusively (as long as home conditions are appropriate, as outlined above).
  - **Modified animal milk is not recommended for children under 6 months of age.**
- If the infant is older than 6 months of age when breastfeeding ceases, feeding options are:
  - Commercial infant formula milk, as long as home conditions are appropriate; **or**
  - Animal milk (boiled for infants under 12 months of age), as part of a diet providing adequate micronutrient intake.

## **SECTION 7.6: INTERIM FEEDING STRATEGIES**

- HIV infected mothers may consider expressing and heat-treating breast milk as an interim feeding strategy under the following special circumstances:
  - a. In the neonatal period, if the infant is born with low birth weight or is otherwise ill and unable to breastfeed;
  - b. The mother is unwell and temporarily unable to breastfeed, or has a temporary breast health problem such as mastitis; **or**
  - c. Antiretroviral drugs (to reduce the risk of HIV transmission) are temporarily not available.
- Some mothers may also consider using expressed and heat-treated breast milk, if feasible, to assist them to stop breastfeeding if the baby is younger than six months of age.
- Mothers choosing to utilize these interim feeding strategies should receive appropriate instruction from health care workers describing the appropriate procedure for heat-treating breast milk, in order to ensure that the milk retains its full nutritional benefits for the infant.

## **SECTION 7.7: MATERNAL NUTRITIONAL SUPPORT**

Good nutrition for pregnant and breastfeeding mothers is important for the survival and well being of the developing baby. In addition, an HIV positive mother's nutrition before, during, and after pregnancy can influence her own health and the risk of transmitting HIV to her child. HIV positive mothers are at higher risk of malnutrition and illness while pregnant and breastfeeding.

During pregnancy and lactation, the mother's need for energy and nutrients increases to meet the demands of:

- Adequate weight gain due to pregnancy
- Development of the baby
- Milk production

Therefore, in order to maintain good health, HIV positive mothers need additional food to meet the extra energy and nutrient needs associated with HIV, pregnancy and lactation.

Food intake for pregnant women should include a variety of foods to meet both macro and micronutrient requirements as listed in tables 16 and 17 below. For further management of diet and related conditions refer to the Lesotho Food Based Dietary Guidelines for people living with HIV and AIDS.

**Table 16: List of Macronutrients**

Nutrient	Sources	Functions
Protein	Meat – chicken, pork, beef, fish Dairy - milk, yoghurt, cheese Eggs Nuts/grains - peanuts, bread Legumes – beans	<ul style="list-style-type: none"> <li>▪ Provides necessary materials for building and repairing worn-out tissues</li> <li>▪ Develops the immune system and resistance to infections</li> </ul>
Carbohydrates	Vegetables Papa, samp, potatoes Fruits – peaches, bananas, apples Grains – bread, rice, cereal	<ul style="list-style-type: none"> <li>▪ Provide energy for the body</li> <li>▪ Fibre (a non-digested type of carbohydrate found in grains, fruits and green leafy vegetables) prevents constipation, coronary heart disease and diabetes</li> <li>▪ Soluble fibre is used in diarrhoea treatment</li> </ul>
Fats	Cooking oil, butter and animal fats	<ul style="list-style-type: none"> <li>▪ Provide energy and heat; important for weight gain</li> <li>▪ Aid in the absorption and transportation of fat-soluble vitamins</li> </ul>

**Table 17: List of Micronutrients**

<b>Nutrient</b>	<b>Sources</b>	<b>Function</b>
Vitamin A	Carrots, spinach, pumpkin, peaches, tenane, sepaile, milk, eggs, liver, fish, oils.	<ul style="list-style-type: none"> <li>▪ Good for white blood cells, vision, healthy skin, bone development</li> <li>▪ Anti-oxidants needed for immune function and resistance to infection</li> </ul>
Vitamin B1 (thiamine)	Milk, eggs, beans, liver, fish, Likhobe tsa poone, tsa mabele, tsa koro, pork	<ul style="list-style-type: none"> <li>▪ Used in energy production</li> <li>▪ Supports heart, muscles, and the central nervous system</li> </ul>
Vitamin B2 (riboflavin)	Milk, eggs, beans, nuts, dairy, nama ea khoho, fish, likhobe	<ul style="list-style-type: none"> <li>▪ Energy production, good vision, making blood cells</li> </ul>
Vitamin B3 (niacin)	Milk, eggs, red meat, poultry, peanuts, likhobe	<ul style="list-style-type: none"> <li>▪ Energy production, healthy skin, supports the nervous system</li> </ul>
Vitamin B6	Likhobe, potatoes, bananas, beans, poultry, green leafy vegetables, tomatoes, liver, fish, watermelon	<ul style="list-style-type: none"> <li>▪ Breaks down protein and fat, production of antibodies</li> <li>▪ Makes red blood cells and supports nerve function</li> </ul>
Vitamin B12	Fish, liver, poultry, kidneys, sardines, milk, cheese, yoghurt, eggs	<ul style="list-style-type: none"> <li>▪ Formation of red and white blood cells - maintains nerve and digestive tissues</li> </ul>
Vitamin C (ascorbic acid)	Oranges, tenane, leshoabe, theepe, spinach, tomatoes, bell peppers, apples	<ul style="list-style-type: none"> <li>▪ For healthy teeth, gums and bones</li> <li>▪ Fights infection</li> <li>▪ Helps iron absorption</li> <li>▪ An anti-oxidant</li> </ul>
Vitamin E	Sunflower oil, likhobe, beans, peas, lentils, cabbage, tenane, leshoabe, eggs	<ul style="list-style-type: none"> <li>▪ An antioxidant that helps prevent cells from damage, increase disease resistance, and aids healing of scar tissue</li> </ul>
Folate (folic acid)	Poultry, liver, fish, beans, peas, green leafy vegetables, oranges	<ul style="list-style-type: none"> <li>▪ Builds new cells, especially red blood cells</li> </ul>
Calcium	Milk, mafi, yoghurt, spinach, cabbage, sepaile, beans, peas, lentils	<ul style="list-style-type: none"> <li>▪ Builds strong bones and teeth</li> <li>▪ Necessary for normal muscle function and blood clotting</li> </ul>
Iodine	Fish, iodized salt, meroho ea sesotho (e.g. theepe, tenane, leshoabe, seruoe)	<ul style="list-style-type: none"> <li>▪ Development and proper thyroid function</li> <li>▪ Important for normal growth and development, and prevention of goitre</li> </ul>
Zinc	Theepe, sepaile, pumpkin, likhobe, nuts, beans, corn, milk, cheese, liver, eggs, garlic, poultry, fish, red meat	<ul style="list-style-type: none"> <li>▪ Important for growth and development</li> <li>▪ Supports the immune system and improves wound healing</li> </ul>
Selenium	Fish, red meat, likhobe, vegetables, eggs, rice, bread	<ul style="list-style-type: none"> <li>▪ An antioxidant</li> <li>▪ Helps prevent breakdown of cells</li> </ul>
Magnesium	Beans, peas, lentils, likhobe, spinach, sepaile	<ul style="list-style-type: none"> <li>▪ Supports muscle and nerve function</li> <li>▪ Releases energy from fats, proteins and carbohydrates</li> <li>▪ Builds strong bones and teeth</li> </ul>
Iron	Red meat, pork, liver, eggs, fish, kidney, green leafy vegetables, beans, peas, lentils, mangangajare	<ul style="list-style-type: none"> <li>▪ Needed for the production of red blood cells and the delivery of oxygen to body tissues</li> </ul>

## CHAPTER EIGHT: MONITORING AND EVALUATION

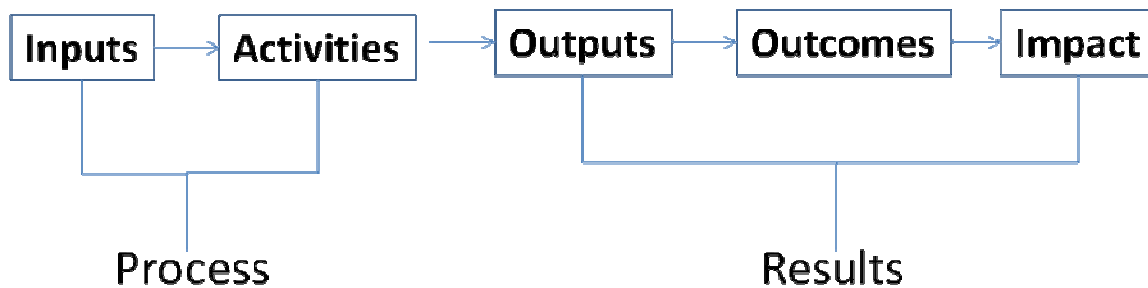
Monitoring and Evaluation (M&E) are very important components of the PMTCT programme. M&E provide a means of planning, directing the programme's roll-out, improving service delivery, allocating resources and demonstrating effectiveness. In addition, M&E provide a strategic and systematic way to assess capacity, measure outcomes and forecast the programme's sustainability. Routine monitoring of implementation will assist stakeholders to assess how efficiently and effectively the programme is bringing change and whether the progress is being made in the direction of the ultimate PMTCT goals for Lesotho. It is anticipated that the national M&E system pertaining to PMTCT will provide timely information that will allow all stakeholders to compare what was planned against what is actually unfolding and, in the process, promote adaptive management. Additionally, evaluation studies can show changes over time and can provide comparisons that demonstrate changes and results from the programme.

### SECTION 8.1: DEFINITIONS

Monitoring and Evaluation are intricately linked concepts and have similar purposes. Monitoring helps to provide useful context for the ultimate evaluation of the PMTCT programme. However, the practice of monitoring is distinct from that of evaluation in several respects.

- **Monitoring:** the routine tracking of planned programme activities to ensure planned implementation, early identification of challenges and timely intervention with remedial measures.
- **Evaluation:** the systematic and objective assessment of the relevance, performance, efficiency, effectiveness, and sustainability of a programme or implemented activities.

It is important to recognise that monitoring and evaluation require systematic and consistent data collection efforts in the form of routine indicator collection, surveys, and qualitative assessments. Data collected can be classified in different categories depending on the information that is gained from the data. For example, some data will provide information regarding the resources used and activities being implemented to achieve results, which are often called **inputs**. This type of data is generally categorized as "**process**" information, because it depicts the process of implementing the programme. Other data will actually measure the "**results**" or effectiveness achieved through the process of implementing the programme; which can be classified as **outputs, outcomes, effectiveness, and/or impact** information/indicators. The diagram below highlights the links between inputs, outputs, outcomes and impact.



The process of data collection for M&E is intended to provide information that can later be analyzed to tell the story of what has happened within and because of the PMTCT programme. Thus, each piece of data (or data element) collected is like a clue that helps stakeholders to understand what has happened during and after the implementation of the PMTCT programme. Each **data element** collected provides information about one or more indicators. Each indicator provides information about the process and effectiveness of the programme. **Indicators** do not necessarily provide an *exact* measurement of the information that is desired. However, a well-designed indicator should provide a strong *indication* of the ultimate information that is desired (e.g. indicators often act as a proxy).

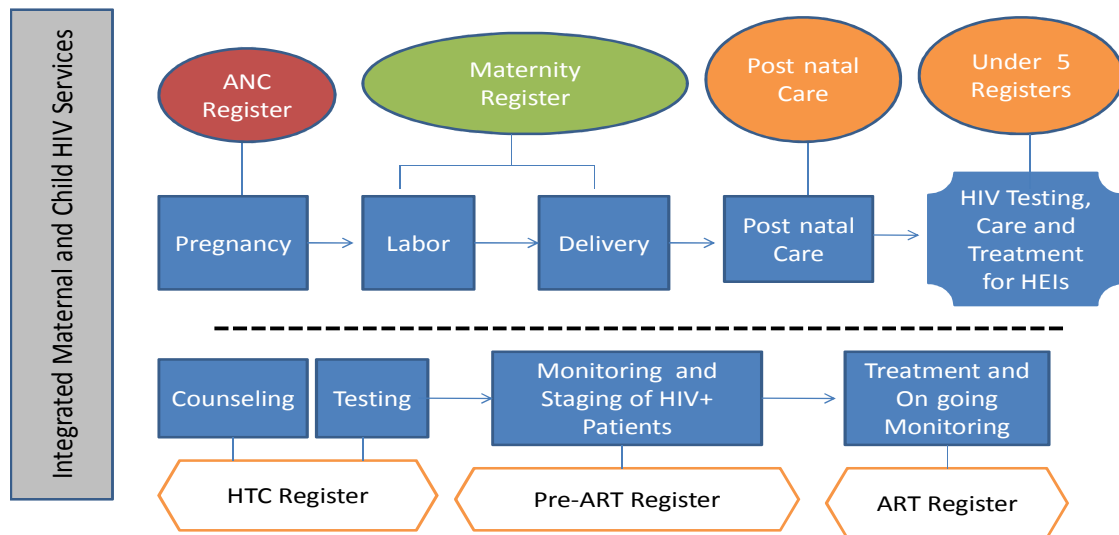
## SECTION 8.2: RECORD KEEPING AND REPORTING

In order to be able to appropriately analyze the data elements and indicators collected for PMTCT, **it is extremely important to maintain complete records of each patient in the register.**

Accurate recording of information in registers, patient records (e.g. LOR), and tally sheets is critical in order to maintain accurate and complete information that can be analyzed to generate a report on the utilization of services by the target population. Record keeping and routine monitoring reports are useful tools for service providers and program managers at facility, regional and national levels for the purposes of learning, planning and resource allocation.

Data elements required for computing PMTCT indicators are integrated into the following registers and summary forms used in maternal and child health care settings (MCH), ART clinics and general health care facilities:

- Antenatal Care Register
- Maternity Register
- Postnatal Care Follow-up Register
- Under-five Register
- HTC Register
- Pre-ART Register
- ART register



Client follow-up data can be particularly difficult to collect, as it requires systematic record keeping over time. As client follow-up with community workers becomes more systematized, it will be necessary to systematically collect and record follow-up data.

### SECTION 8.3: INDICATORS FOR MONITORING AND EVALUATION OF THE PMTCT PROGRAM

M&E indicators for PMTCT are incorporated into the national data collection system. Each indicator relates to a predetermined length of time (i.e. compiled monthly or annually). The minimum PMTCT indicators required to manage the programme at the national level are listed in Annex 6, along with their definitions and data sources.

The following indicators will be utilized to manage the programme at both the district and national levels. Data elements to be collected by facilities for computation of these indicators are listed in Annex 7.

#### Antenatal Indicators

1. Percentage of ANC facilities that provide **both** HIV testing and ARVs for PMTCT
2. Percentage of pregnant women who were tested for HIV during this pregnancy and received their results
3. Percentage of pregnant women who have been tested for HIV and received their results, plus those with previously known positive HIV status Number of pregnant women attending ANC with known HIV infection

4. Percentage of pregnant women attending ANC, L&D and postpartum services who are HIV positive
5. Percentage of pregnant women attending at least one ANC visit
6. Percentage of pregnant women attending four ANC visits during their pregnancy
7. Percentage of HIV infected pregnant women who were assessed for ART eligibility on site or by referral
8. Percentage of HIV infected pregnant women eligible for ART
9. Percentage of HIV infected pregnant women eligible for ART who were initiated on ART
10. Percentage of HIV infected pregnant women who received antiretrovirals to reduce the risk of MTCT
11. Percentage of HIV positive pregnant women initiated on co-trimoxazole prophylaxis
12. Percentage of eligible HIV positive pregnant women initiated on IPT
13. Percentage of HIV positive pregnant women initiated on TB treatment
14. Percentage of pregnant women tested for syphilis in ANC
15. Percentage of pregnant women with a positive syphilis test
16. Percentage of pregnant women with Hb < 8g/dl
17. Percentage of pregnant women who received iron supplementation
18. Percentage of ANC clients whose partners attend at least one ANC visit with the client
19. Proportion of partners of ANC clients who know their status

### **Maternity Indicators**

20. Percentage of women delivering at a health facility
21. Percentage of births attended by a skilled attendant
22. Percentage of women given oxytocin during the 3<sup>rd</sup> stage of labour
23. Percentage of HIV positive women who received Vitamin A post delivery
24. Percentage of infants initiating breast feeding within 1 hour of birth
25. Percentage of women attending PNC within one week



- 26. Percentage of women attending PNC at 6 weeks
- 27. Percentage of women receiving family planning services at PNC (disaggregate by HIV status)
- 28. Percentage of women receiving screening for cervical cancer at 14 weeks post delivery (disaggregate by VIA or pap smear)

### **Under-5 Indicators**

- 29. Percentage of HIV exposed infants who are exclusively breast feeding at 6 months of age
- 30. Percentage of HIV exposed infants who are replacement feeding at 6 months of age
- 31. Percentage of HIV exposed infants who are mixed feeding at 6 months of age
- 32. Percentage of HIV exposed infants who received NVP for 6 weeks post natal to reduce the risk of MTCT transmission
- 33. Percentage of HIV exposed infants initiated on co-trimoxazole prophylaxis within two months of birth
- 34. Percentage of exposed infants who received a DNA PCR test for HIV in the first 2 months of life (disaggregate by test result)
- 35. Percentage of exposed infants with a confirmed positive 1<sup>st</sup> DNA PCR within the first 2 months of life
- 36. Percentage of HIV exposed infants who are breastfeeding and taking NVP prophylaxis to reduce the risk of HIV transmission, at 12 months of age
- 37. Percentage of HIV exposed infants, with negative 1<sup>st</sup> DNA PCR, who are confirmed to be definitively HIV infected at the end of the breastfeeding period

### **Impact Indicators**

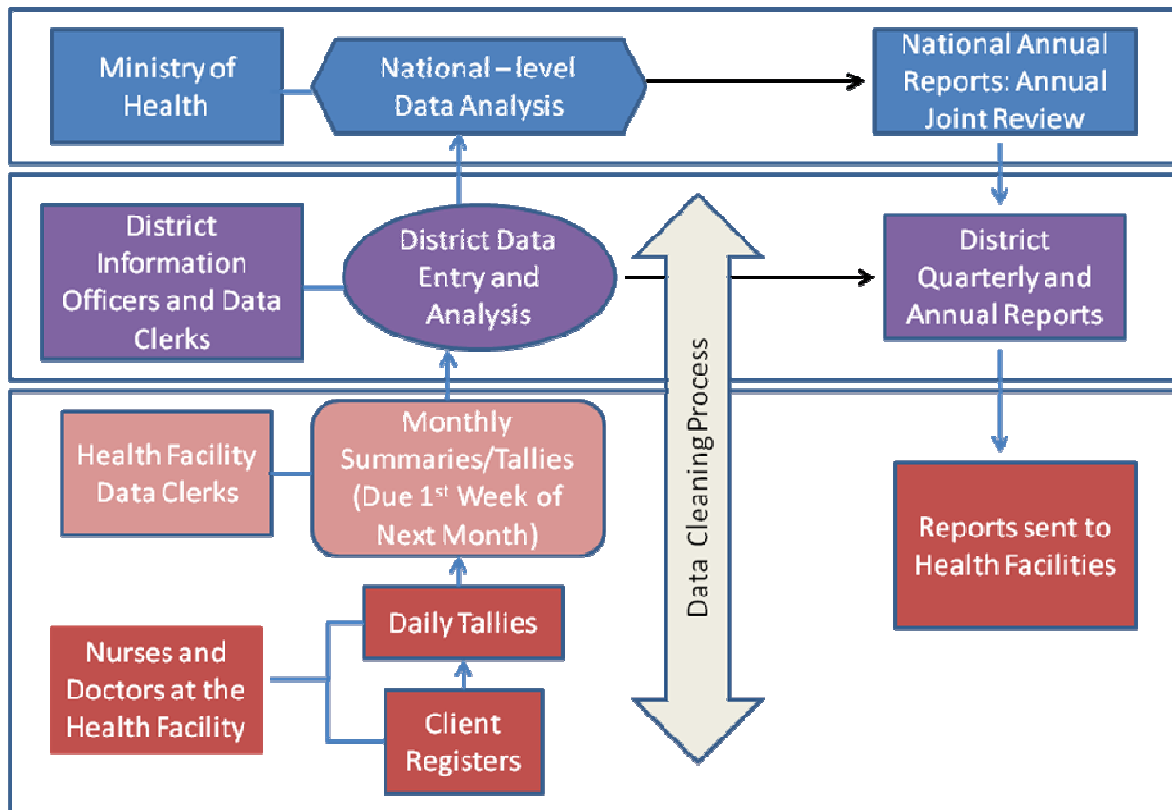
- 38. Percentage of infants born to HIV infected mothers who are infected with HIV
- 39. Percentage of infants born to HIV infected mothers who are infected with HIV
- 40. Percentage of infants born to HIV infected mothers with definitive negative HIV status at the end of HIV exposure (disaggregate by ARV regimen and breastfeeding status)

### **Cross-Cutting Indicators**

- 41. Percentage of women who tested HIV negative in ANC and then tested HIV positive anytime after 36 weeks gestation (e.g. ANC, L&D, PNC)

## SECTION 8.4: DATA FLOW

### Data Flow in Lesotho



Health workers in facilities will enter information in the registers for all clients receiving services. For services which are provided in series, such as several visits during the same pregnancy or immunization / growth monitoring for under-5 children, the registers are longitudinal (details pertaining to one individual are filled on one line and subsequent visits are recorded on the same line). This is very important to provide good quality services, to track defaulters, and to monitor the programme. From these patient registers, daily summaries (compiled by nurses) and monthly summary reports (compiled by data clerks) will be calculated and compiled at each facility to reflect all PMTCT services provided during the month. However, these summary reports will provide data elements and indicators of PMTCT services based on the total number of services provided - not based on each individual client served (i.e. counting is done by service not by client). Tally sheets are provided to make monthly report compilation easier.

Monthly reports are then submitted to the district level public health nurse and information officer of the district hospital during the first week of the next month. Public health nurses and District Information Officers are in charge of the collection and compilation of the reports from all health facilities in the district. All reports are compiled by the Health Planning and Statistics Unit of the Ministry of Health. The reports are then sent to the Family Health Division for activities taking place in MCH and Maternity, and to the STI/HIV Directorate for activities taking place in ART

clinics. These reports should be received by the Ministry of Health no later than the second week of the next month in order to allow feedback and relevant action.

#### **SECTION 8.5: QUALITY OF DATA**

Collecting accurate data is a challenging task and depends on the efforts put in place to ensure quality of data recording. There should be a balance between the time and monetary costs and the quality of data collected. The PMTCT programme will work with Health Planning and Statistics Unit (HPSU) to ensure that the data obtained are of sufficient quality to support appropriate management decisions but not too costly to collect. This requires judgement regarding the necessary level of precision or quality and the costs that can be afforded. Efforts will be made to minimise common data errors such as incompleteness, inaccuracies, and inconsistency by regular monitoring and mentoring of health personnel in charge of data collection and reporting. It is hoped that data quality will improve with time as the PMTCT programme develops, expands and becomes routine. Focus should be balanced between the need for quality retrospective data and the need for quality and timely data collection moving forward.

#### **SECTION 8.6: SUPPLY CHAIN DATA**

As part of the process for implementing quality data collection, it is also important to collect and maintain accurate information regarding the supplies and logistics available to provide PMTCT services. Implementation of PMTCT services relies on existing facility systems and infrastructure. Therefore, the supply chain distribution and management for PMTCT services should be integrated into the general logistics currently in place in health facilities. The main commodities used for PMTCT are HIV testing kits, ARVs (AZT, 3TC, NVP), co-trimoxazole, vitamin A, iron and folate tablets, condoms and family planning commodities. All ARVs are now distributed by the ART dispensary and should be ordered and monitored by the pharmacy technician of the ART clinic. The STI and HIV/AIDS Directorate is in charge of the management of supply chain of ARVs for the entire country.

## ANNEX 1: CONTRACEPTIVE METHODS IN THE CONTEXT OF HIV INFECTION

Method	Use in HIV positive women	Use in HIV positive women who are on HAART and clinically well	Remarks
<b>Male condom</b>	<ul style="list-style-type: none"> <li>▪ Highly recommended</li> <li>▪ Spermicide use (Nonoxynol-9) is not recommended for clients at high risk of HIV or who are HIV positive</li> </ul>	Highly recommended	<ul style="list-style-type: none"> <li>▪ Requires partner cooperation and correct technique</li> <li>▪ Effectiveness depends on consistent and correct use</li> <li>▪ Protects against transmission of STIs and HIV</li> </ul>
<b>Female condom</b>	<ul style="list-style-type: none"> <li>▪ Highly recommended</li> <li>▪ Spermicide use (Nonoxynol-9) is not recommended for clients at high risk of HIV or who are HIV positive</li> </ul>	Highly recommended	<ul style="list-style-type: none"> <li>▪ Not widely available</li> <li>▪ Effectiveness depends on consistent and correct use</li> <li>▪ Protects against transmission of STIs and HIV</li> </ul>
<b>Copper (Cu) IUD</b>	<ul style="list-style-type: none"> <li>▪ May use</li> <li>▪ Follow-up recommended</li> </ul>	<ul style="list-style-type: none"> <li>▪ May use</li> <li>▪ Follow-up recommended</li> <li>▪ May be associated with increased risk of bleeding and possible exacerbation of anaemia on ARVs</li> <li>▪ Slight risk of uterine infection with insertion</li> <li>▪ Women with IUDs who develop advanced HIV disease should be monitored closely for PID</li> </ul>	<ul style="list-style-type: none"> <li>▪ NOT recommended for use in women who were treated for PID in the last six months and those with active STIs</li> <li>▪ Offers no protection against STIs or HIV protection</li> <li>▪ IUDs are not usually recommended for women with advanced HIV who are not on ART</li> <li>▪ HIV positive women on ART should be clinically well before IUD is inserted</li> </ul>
<b>Progesterone only injectable (DMPA) implant (NET-EN)</b>	No restrictions for use	<ul style="list-style-type: none"> <li>▪ May use with follow-up</li> <li>▪ Drug interactions with some ARVs likely</li> </ul>	<ul style="list-style-type: none"> <li>▪ Significance of ARV - steroid interactions unclear</li> <li>▪ Offers no STI/HIV protection</li> <li>▪ It is important to comply with time for follow-up injections or get next injection by 2 weeks prior to the scheduled follow-up date</li> </ul>
<b>Combined Oral Contraceptives (COC's)</b>	No restrictions for use	<ul style="list-style-type: none"> <li>▪ May use with follow-up</li> <li>▪ Drug interactions with some ARVs likely</li> <li>▪ Dual protection recommended</li> </ul>	<ul style="list-style-type: none"> <li>▪ No protection against STIs or HIV for client or partner</li> <li>▪ Must be taken daily</li> </ul>
<b>Surgical Sterilization</b>	No restrictions for use	<ul style="list-style-type: none"> <li>▪ No restrictions for use</li> <li>▪ Women and men with advanced disease may be at slightly higher risk of surgical complications</li> <li>▪ Consider delaying surgery pending initiation of ARVs</li> </ul>	<ul style="list-style-type: none"> <li>▪ No protection against STIs or HIV for client or partner</li> </ul>
<b>Lactational Amenorrhea Method</b>	No restrictions for use	No restrictions for use	<ul style="list-style-type: none"> <li>▪ No protection against STIs or HIV for client or partner</li> <li>▪ Women should consider using another method of family planning after weaning, usually at 6 months</li> </ul>

Method	Use in HIV positive women	Use in HIV positive women who are on HAART and clinically well	Remarks
<b>Emergency contraception (Postinor-2, or use COC pills)</b>	No restrictions	No restrictions	<ul style="list-style-type: none"> <li>▪ Information about Emergency Contraception and where to get it should be provided to all women</li> <li>▪ Women who have been raped should be offered Emergency Contraception</li> </ul>
<b>Dual protection</b>	Highly recommended	Highly recommended	<ul style="list-style-type: none"> <li>▪ Dual protection should be recommended to all women and men, regardless of HIV status</li> </ul>

Source: WHO Medical Eligibility Criteria, for Starting Contraceptive Methods, 2004

## ANNEX 2: SUMMARY OF PACKAGE OF SERVICES FOR WOMEN AND CHILDREN DURING RECOMMENDED POST-NATAL VISITS

Within 6 hours of delivery	
<p><b>Mother</b></p> <ul style="list-style-type: none"> <li>▪ Assess maternal well-being</li> <li>▪ Measure blood pressure and body temperature</li> <li>▪ Assess for vaginal bleeding, uterine contraction and fundal height.</li> <li>▪ Identify any signs of serious maternal complications (haemorrhage, eclampsia, and infection) and initiate treatment</li> <li>▪ Suture episiotomy or perineum as appropriate</li> <li>▪ Counsel on disposal of potentially infectious soiled pads or other materials</li> <li>▪ Advise on where to call for help in case of emergency (for home based delivery)</li> <li>▪ Immunize with Tetanus Toxoid if not done during pregnancy</li> <li>▪ Support initiation of breastfeeding if this is the chosen infant feeding method</li> <li>▪ Continue micronutrient supplementation (iron, folate, iodized salt, and Vitamin A 200,000 IU single dose before discharge from facility)</li> <li>▪ For HIV positive women, continue ARV prophylaxis or ART as indicated</li> <li>▪ Offer HIV testing if not done already</li> <li>▪ Schedule return visit</li> </ul>	<p><b>Infant</b></p> <ul style="list-style-type: none"> <li>▪ Thermal protection for the baby, providing a warm environment and keeping mother and infant together</li> <li>▪ Frequent exclusive breast feeding, if this is the chosen method of infant feeding</li> <li>▪ Keep the infant clean</li> <li>▪ Clean cord care</li> <li>▪ Weigh the infant</li> <li>▪ Physical examination as per standards</li> <li>▪ Frequent observation of baby by the mother for danger signs</li> <li>▪ Nevirapine prophylaxis as soon as possible following delivery and continue as stated in the guidelines (1ml if birth weight 2.0-2.49kg, 1.5ml if &gt;2.5kg)</li> <li>▪ Immunize with BCG and OPV</li> <li>▪ Schedule return visit</li> </ul>
Within 1 week of delivery	
<ul style="list-style-type: none"> <li>▪ Take history</li> <li>▪ Perform physical examination: check for pallor; assess heart rate, temperature, BP; examine breasts (look for cracks, fissures, abscess, engorgement); assess for uterus involution, lochia, anaemia; exclude puerperal sepsis</li> <li>▪ Provide: <ul style="list-style-type: none"> <li>○ Co-trimoxazole prophylaxis if indicated</li> <li>○ Vitamin A 200,000 IU if not given at delivery</li> <li>○ Stop AZT/3TC tail</li> <li>○ Continue ART as indicated and assess for adherence</li> <li>○ Haematinics if indicated</li> </ul> </li> <li>▪ Offer HIV testing if not done already and stage if HIV positive</li> <li>▪ Counsel on: <ul style="list-style-type: none"> <li>○ Danger signs, complication readiness, and when/where to seek care for urgent issues</li> <li>○ Care of breasts – prevention and management of engorgement, management of nipple fissures or cracks, positioning, recognizing breast infections</li> <li>○ Care of the perineum</li> <li>○ Nutrition</li> <li>○ Birth spacing and family planning</li> <li>○ Safer sex</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Take history</li> <li>▪ Perform physical examination: assess respiratory rate, heart rate, and temperature; evaluate for signs of dehydration; evaluate respiratory effort, alertness, tone, pallor, reactivity, cry</li> <li>▪ Assess for adverse drug reactions related to ARV prophylaxis</li> <li>▪ Assess the umbilical cord for bleeding or pus</li> <li>▪ Weigh the infant and evaluate growth</li> <li>▪ Confirm or provide immunizations: OPV, BCG</li> <li>▪ Continue NVP prophylaxis</li> <li>▪ Observe breastfeeding (if this is the chosen infant feeding method)</li> <li>▪ Evaluate for danger signs and treat infection if indicated (or refer)</li> <li>▪ Counsel on: <ul style="list-style-type: none"> <li>○ Adherence to ARV prophylaxis</li> <li>○ Early infant diagnosis of HIV with DNA PCR at 6 weeks</li> <li>○ Appropriate infant feeding (how often to feed, proper breast attachment if breast feeding)</li> <li>○ General newborn care (keep the baby warm, danger signs: breathing fast, fever, refusal to feed, septic umbilical stump)</li> </ul> </li> <li>▪ Schedule next appointment</li> </ul>

<ul style="list-style-type: none"> <li>○ Disposal of potentially infectious soiled pads or other material</li> <li>▪ Schedule next appointment</li> </ul>	
<b>6 weeks after delivery</b>	
<b>Mother</b>	<b>Infant</b>
<ul style="list-style-type: none"> <li>▪ Take history</li> <li>▪ Perform physical examination: check for pallor; assess heart rate, respiratory rate, temperature, BP; examine breasts</li> <li>▪ Provide support and counselling on infant feeding (how often / how much to feed; proper breast attachment if breast feeding)</li> <li>▪ Counsel on family planning and provide client with the method of her choice</li> <li>▪ Perform WHO clinical staging for HIV positive women</li> <li>▪ Treat opportunistic infections if present</li> <li>▪ Give co-trimoxazole prophylaxis if indicated</li> <li>▪ Continue ART and check adherence</li> <li>▪ Give Vitamin A 200,000 IU if not given at previous visits</li> <li>▪ Send blood for laboratory monitoring if indicated (CD4, FBC, Hb, urea / creatinine, LFT)</li> <li>▪ Provide nutrition counselling</li> <li>▪ Schedule next appointment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Take history</li> <li>▪ Provide immunizations as per MOHSW guidelines</li> <li>▪ Weigh the infant and evaluate growth and development</li> <li>▪ Provide support and counselling on infant feeding (how often / how much to feed; proper breast attachment if breast feeding)</li> <li>▪ Perform physical examination: assess respiratory rate, heart rate, temperature; assess for signs of dehydration</li> <li>▪ Perform WHO clinical staging</li> <li>▪ Initiate co-trimoxazole prophylaxis</li> <li>▪ Continue Nevirapine for infants of mothers who received ARV prophylaxis and are breastfeeding</li> <li>▪ Discontinue Nevirapine for infants whose mothers are on ART or for infants who are not breastfeeding</li> <li>▪ Treat opportunistic infections if present</li> <li>▪ Send blood for DNA PCR testing</li> <li>▪ Send blood for CD4 cell count and percentage if signs / symptoms suggestive of HIV infection are present</li> <li>▪ Schedule next appointment</li> </ul>
<b>10 weeks after delivery</b>	
<ul style="list-style-type: none"> <li>▪ Take history</li> <li>▪ Perform physical examination: check for pallor; assess heart rate, respiratory rate, temperature, BP; examine breasts</li> <li>▪ Counsel on family planning and provide client with the method of her choice</li> <li>▪ Perform WHO clinical staging for HIV infected women</li> <li>▪ Treat opportunistic infections if present</li> <li>▪ Give co-trimoxazole prophylaxis if indicated</li> <li>▪ Continue ART and check adherence</li> <li>▪ Provide nutrition counselling</li> <li>▪ Send blood for laboratory monitoring if indicated (CD4, FBC, Hb, urea / creatinine, LFT)</li> <li>▪ Schedule next appointment; book an appointment for review in ART clinic if appropriate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide immunizations as per MOHSW guidelines</li> <li>▪ Weigh the infant and evaluate growth and development</li> <li>▪ Perform physical examination: assess respiratory rate, heart rate, temperature; assess for signs of dehydration</li> <li>▪ Provide results of DNA PCR test to the caretaker</li> <li>▪ Perform WHO clinical staging if indicated</li> <li>▪ Provide co-trimoxazole prophylaxis if HIV infection not definitively ruled out</li> <li>▪ Continue Nevirapine for HIV negative exposed infants of mothers who are breastfeeding</li> <li>▪ Treat opportunistic infections if present</li> <li>▪ Send blood for CD4 cell count and percentage if signs / symptoms suggestive of HIV infection are present</li> <li>▪ Provide support and counselling on infant feeding (how often / how much to feed; proper breast attachment if breast feeding)</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Initiate on ART according to National Guidelines if appropriate</li> <li>▪ Schedule next appointment</li> </ul>
<b>14 weeks after delivery</b>	
<ul style="list-style-type: none"> <li>▪ Perform physical examination: check for pallor; assess heart rate, respiratory rate, temperature, BP; examine breasts</li> <li>▪ Counsel on family planning and provide client with the method of her choice</li> <li>▪ Perform WHO clinical staging</li> <li>▪ Treat opportunistic infections if present</li> <li>▪ Give co-trimoxazole prophylaxis if indicated Continue ART as indicated and assess for adherence</li> <li>▪ Send blood for laboratory monitoring if indicated (CD4, FBC, Hb, urea / creatinine, LFT)</li> <li>▪ Provide nutrition counselling</li> <li>▪ Perform Pap smear</li> <li>▪ Schedule next appointment; book an appointment for review in ART clinic if appropriate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide immunizations as per MOHSW guidelines</li> <li>▪ Weigh the infant and evaluate growth and development</li> <li>▪ Perform physical examination: assess respiratory rate, heart rate, temperature; assess for signs of dehydration</li> <li>▪ Perform WHO clinical staging if indicated</li> <li>▪ Provide co-trimoxazole prophylaxis if HIV infection not definitively ruled out</li> <li>▪ Continue Nevirapine for HIV negative exposed infants of mothers who are breastfeeding and assess for adherence</li> <li>▪ Initiate ART according to National Guidelines if appropriate</li> <li>▪ Treat opportunistic infections if present</li> <li>▪ Provide results of DNA PCR test to the caretaker</li> <li>▪ Send blood for CD4 cell count and percentage if signs / symptoms suggestive of HIV infection are present</li> <li>▪ Provide support and counselling on infant feeding (how often / how much to feed; proper breast attachment if breast feeding)</li> <li>▪ Schedule next appointment; book an appointment for review in ART clinic if appropriate</li> </ul>
<b>6 months after delivery</b>	
<ul style="list-style-type: none"> <li>▪ Perform physical examination: check for pallor; assess heart rate, respiratory rate, temperature, BP; examine breasts</li> <li>▪ Counsel on the addition of complementary foods to the infant's diet</li> <li>▪ Reinforce infant feeding counselling particularly complementary feeding</li> <li>▪ Counsel on family planning and provide client with the method of her choice</li> <li>▪ Perform WHO clinical staging</li> <li>▪ Treat opportunistic infections if present</li> <li>▪ Give co-trimoxazole prophylaxis if indicated Continue ART as indicated and assess for adherence</li> <li>▪ Send blood for laboratory monitoring if indicated (CD4, FBC, Hb, urea / creatinine, LFT)</li> <li>▪ Provide nutrition counselling</li> <li>▪ Schedule an appointment in ART clinic for review</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide immunizations as per MOHSW guidelines</li> <li>▪ Weigh the infant and evaluate growth and development</li> <li>▪ Perform physical examination: assess respiratory rate, heart rate, temperature; assess for signs of dehydration</li> <li>▪ Perform WHO clinical staging if indicated</li> <li>▪ Provide co-trimoxazole prophylaxis if HIV infection not definitively ruled out</li> <li>▪ Continue Nevirapine for HIV negative exposed infants of mothers who are breastfeeding</li> <li>▪ Treat opportunistic infections if present</li> <li>▪ Give Vitamin A 100,000 IU</li> <li>▪ Schedule next appointment</li> </ul>



## ANNEX 3: WHO CLINICAL STAGING OF HIV DISEASE IN ADULTS AND ADOLESCENTS

<b>Clinical Stage 1</b>
<ul style="list-style-type: none"> <li>▪ Asymptomatic</li> <li>▪ Persistent generalized lymphadenopathy</li> </ul>
<b>Clinical Stage 2</b>
<ul style="list-style-type: none"> <li>▪ Moderate unexplained weight loss (under 10% of presumed or measured body weight)</li> <li>▪ Recurrent respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis)</li> <li>▪ Herpes Zoster</li> <li>▪ Angular cheilitis</li> <li>▪ Recurrent oral ulceration</li> <li>▪ Papular pruritic eruptions</li> <li>▪ Seborrhoeic dermatitis</li> <li>▪ Fungal nail infections</li> </ul>
<b>Clinical Stage 3</b>
<ul style="list-style-type: none"> <li>▪ Unexplained severe weight loss (over 10% of presumed or measured body weight)</li> <li>▪ Unexplained chronic diarrhoea for longer than 1 month</li> <li>▪ Unexplained persistent fever (intermittent or constant for longer than 1 month)</li> <li>▪ Persistent oral candidiasis</li> <li>▪ Oral hairy leukoplakia</li> <li>▪ Pulmonary tuberculosis (TB)</li> <li>▪ Severe bacterial infections (e.g. pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, bacteraemia)</li> <li>▪ Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis</li> <li>▪ Unexplained anaemia (&lt; 8 g/dl), neutropenia (&lt; 0.5 x 10<sup>9</sup>/l) and/or chronic thrombocytopenia (&lt; 50 x 10<sup>9</sup>/l)</li> </ul>
<b>Clinical Stage 4</b>
<ul style="list-style-type: none"> <li>▪ HIV wasting syndrome</li> <li>▪ <i>Pneumocystis</i> pneumonia</li> <li>▪ Recurrent severe bacterial pneumonia</li> <li>▪ Chronic herpes simplex infection (orolabial, genital or anorectal of more than one month's duration, or visceral at any site)</li> <li>▪ Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs)</li> <li>▪ Extrapulmonary TB</li> <li>▪ Kaposi sarcoma</li> <li>▪ Cytomegalovirus infection (retinitis or infection of other organs)</li> <li>▪ Central nervous system (CNS) toxoplasmosis / HIV encephalopathy</li> <li>▪ Extrapulmonary cryptococcosis including meningitis</li> <li>▪ Disseminated non-tuberculous mycobacteria infection</li> <li>▪ Progressive multifocal leukoencephalopathy (PML)</li> <li>▪ Chronic cryptosporidiosis</li> <li>▪ Chronic isosporiasis</li> <li>▪ Disseminated mycosis (extrapulmonary histoplasmosis, coccidiomycosis)</li> <li>▪ Recurrent septicaemia (including non-typhoidal <i>Salmonella</i>)</li> <li>▪ Lymphoma (cerebral or B cell non-Hodgkin)</li> <li>▪ Invasive cervical carcinoma</li> <li>▪ Atypical disseminated leishmaniasis</li> <li>▪ Symptomatic HIV-associated nephropathy or HIV-associated cardiomyopathy</li> </ul>

**ANNEX 4: SUMMARY OF ARV PROPHYLAXIS REGIMENS FOR MOTHERS (CD4 > 350) AND INFANTS FOR PMTCT**

<b>Women seen during pregnancy</b>			
<b>ANTENATAL</b>	<b>INTRAPARTUM</b>	<b>POSTPARTUM</b>	<b>POSTNATAL</b>
<p>Mother</p> <p>AZT 300 mg twice a day starting at 14 weeks of gestation or as soon as possible thereafter</p>	<p>Mother</p> <p>At onset of labour: NVP 200 mg AZT 600 mg } Combivir 3TC 300 mg } 2 tablets</p> <p>Then AZT 300 mg + 3TC 150 mg (Combivir 1 tablet) 12 hours later if not yet delivered</p>	<p>Mother</p> <p>AZT 300 mg + 3TC 150 mg (Combivir 1 tablet) twice daily for 7 days</p>	<p>Infant</p> <p>Nevirapine syrup (1.5ml if birth weight &gt; 2.5kg, or 1ml if birth weight 2 – 2.49kg) immediately after birth (or as soon as possible):</p> <p>For EBF infants continue Nevirapine until at least 1 week after cessation of breastfeeding</p> <p>For EFF infants continue Nevirapine until 6 weeks of age</p>
<b>Women in labour who DID NOT receive any ARV prophylaxis during pregnancy</b>			
<b>ANTENATAL</b>	<b>INTRAPARTUM</b>	<b>POSTPARTUM</b>	<b>POSTNATAL</b>
<p>Mother</p> <p>None</p>	<p>Mother</p> <p>At onset of labour: NVP 200 mg AZT 600 mg } Combivir 3TC 300 mg } 2 tablets</p> <p>Then AZT 300 mg + 3TC 150 mg (Combivir 1 tablet) 12 hours later if not yet delivered</p>	<p>Mother</p> <p>AZT 300 mg + 3TC 150 mg (Combivir 1 tablet) twice daily for 7 days</p>	<p>Infant</p> <p>Nevirapine syrup (1.5ml if birth weight &gt; 2.5kg, or 1ml if birth weight 2 – 2.49kg) immediately after birth (or as soon as possible):</p> <p>For EBF infants continue Nevirapine until at least 1 week after cessation of breastfeeding</p> <p>For EFF infants continue Nevirapine until 6 weeks of age</p>
<b>Women who DID NOT receive any ARV prophylaxis during pregnancy or labour</b>			
<b>ANTENATAL</b>	<b>INTRAPARTUM</b>	<b>POSTPARTUM</b>	<b>POSTNATAL</b>
<p>Mother</p> <p>None</p>	<p>Mother</p> <p>None</p>	<p>Mother</p> <p>None</p>	<p>Infant</p> <p>Nevirapine syrup (1.5ml if birth weight &gt; 2.5kg, or 1ml if birth weight 2 – 2.49kg) immediately after birth (or as soon as possible):</p> <p>For EBF infants continue Nevirapine until at least 1 week after cessation of breastfeeding</p> <p>For EFF infants continue Nevirapine until 6 weeks of age</p>

## ANNEX 5: WHO PAEDIATRIC CLINICAL STAGING

(For children  $\leq 15$  years with established HIV infection)

### CLINICAL STAGE 1

- Asymptomatic
- Persistent generalized lymphadenopathy (PGL)

### CLINICAL STAGE 2

- Unexplained persistent hepatosplenomegaly
- Papular pruritic eruptions
- Extensive wart virus infection (facial,  $>5\%$  of body area or disfiguring)
- Extensive molluscum contagiosum (facial,  $>5\%$  of body area or disfiguring)
- Recurrent oral ulcerations (2 or more episodes in 6 months)
- Unexplained persistent parotid enlargement
- Lineal gingival erythema (LGE)
- Herpes zoster
- Recurrent or chronic upper RTIs (otitis media, otorrhoea, sinusitis, tonsillitis)
- Fungal nail infections

### CLINICAL STAGE 3

- Unexplained moderate malnutrition not adequately responding to standard therapy
- Unexplained persistent diarrhoea (14 days or more)
- Unexplained persistent fever ( $> 37.5^{\circ}\text{C}$ , intermittent or constant, for longer than 1 month)
- Persistent oral candidiasis (after the first 6 weeks of life)
- Oral hairy leukoplakia
- Acute necrotizing ulcerative gingivitis/periodontitis
- Lymph node TB
- Pulmonary TB
- Severe recurrent bacterial pneumonia
- Symptomatic lymphoid interstitial pneumonitis (LIP)
- Chronic HIV-associated lung disease including bronchiectasis
- Unexplained anaemia ( $< 8.0 \text{ gm/dl}$ ), neutropenia ( $< 0.5 \times 10^9 /\text{L}^3$ ) or chronic thrombocytopenia ( $< 50 \times 10^3 /\text{L}^3$ )

### CLINICAL STAGE 4

- Unexplained severe wasting, stunting, or severe malnutrition not responding to standard therapy
- Pneumocystis pneumonia
- Recurrent severe bacterial infections (eg. empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia)
- Chronic Herpes Simplex infection; (orolabial or cutaneous  $> 1$  month's duration, or visceral at any site)
- Extrapulmonary TB
- Kaposi sarcoma
- Oesophageal candidiasis (or candida of trachea, bronchi, or lungs)
- CNS toxoplasmosis (after the neonatal period)
- HIV encephalopathy
- CMV infection (retinitis or affecting another organ, with onset at age  $> one$  month)
- Extrapulmonary Cryptococcosis (including meningitis)
- Disseminated endemic mycosis (extrapulmonary Histoplasmosis, Coccidiomycosis)
- Chronic Cryptosporidiosis (with diarrhoea)
- Chronic Isosporiasis
- Disseminated non-tuberculous mycobacteria infection
- Cerebral or B cell non-Hodgkin lymphoma
- Progressive multifocal leukoencephalopathy (PML)
- HIV-associated cardiomyopathy or nephropathy
- HIV-associated rectovaginal fistula

## ANNEX 6: INFANT FEEDING ASSESSMENT AND COUNSELLING

### HOW TO USE THE FLOW CHART

#### 1. IF THIS IS THE FIRST INFANT FEEDING COUNSELLING SESSION

##### **And if she is pregnant**

- Follow steps 1-4. If she needs to decide which feeding option to choose, follow steps 1-3 and ask her to return to discuss step 4.
- If she is early in her pregnancy, ask her to return again closer to her delivery date to review how to feed her baby.

##### **If she already has a child:**

- Follow steps 1-3. If the mother is not breastfeeding at all, however, do not discuss the advantages and disadvantages of breastfeeding.
- Continue with step 5.

#### 2. IF THE MOTHER HAS ALREADY BEEN COUNSELLED AND CHOSEN A FEEDING METHOD, BUT SHE HAS NOT YET LEARNED HOW TO PRACTICE IT:

##### **And she is pregnant**

- Do step 4 only.

##### **And she already has a child:**

- Begin with step 4 and continue with step 5.

#### 3. IF THIS IS A FOLLOW-UP VISIT

- Begin with step 5.
- Review how to practice the feeding method.

##### **REMEMBER:**

- Use “listening and learning skills” and skills for building confidence and giving support.
- Check to ensure that the mother understands what you have discussed.
- Arrange for follow-up or referral as needed.

### COUNSELLING FLOW CHART

STEP 1  
Explain the risks of mother-to-child transmission

STEP 2  
Explain the risks advantages and disadvantages of different feeding options starting with the mother’s initial preference.

STEP 3  
Explore with the mother her home and family situation and help the mother choose an appropriate feeding option.

STEP 4  
Explain how to practice the chosen feeding option and give her the appropriate take-home pamphlet.

How to practice exclusive breastfeeding for the first 6 months	How to give only formula Remind the mother that she can never breastfeed if she chooses formula
--	--

STEP 5  
Follow-up with the mother and baby.

- Monitor growth
- Check feeding practices
- Check for signs of illness
- Discuss feeding for infants 6-24 months

**ANNEX 7: MINIMUM PMTCT INDICATORS FOR NATIONAL PROGRAMME MONITORING AND EVALUATION**

Indicator	Data Element		Data Source
	Numerator	Denominator	
<b>Antenatal</b>			
1. Percentage of ANC facilities that provide <b>both</b> HIV testing and ARVs for PMTCT	Number of health facilities providing ANC services that offer <b>both</b> HIV testing and ARVs for PMTCT	Total number of health facilities providing ANC services in Lesotho	<b>Numerator:</b> ANC Register <b>Denominator:</b> HPSU Official List for Current Year
2. Percentage of pregnant women who were tested for HIV during this pregnancy and received their results	Number of women attending ANC, L&D and postpartum services who were tested for HIV and received their results	Number of women attending ANC, L&D and postpartum services with unknown HIV status	<b>Numerator:</b> ANC Summary Form and Maternity Register <b>Denominator:</b> ANC Summary Form and Maternity Register

Indicator	Data Element		Data Source
	Numerator	Denominator	
3. Percentage of pregnant women who have been tested for HIV and received their results, plus those with previously known positive HIV status	Number of women attending ANC, L&D and postpartum services who were tested for HIV and received their results, plus those with previously known positive HIV status	Estimated number of pregnant women in the population	<b>Numerator:</b> ANC Summary Form and Maternity Register  <b>Denominator:</b> population estimates
4. Percentage of pregnant women attending ANC, L&D and postpartum services who are HIV positive	Number of pregnant women with positive HIV status (number of women testing HIV positive in ANC plus the number of pregnant women with known HIV positive status before 1 <sup>st</sup> visit)	Total number of pregnant women attending ANC, L&D, and postpartum services	<b>Denominator:</b> ANC Summary Form and Maternity Register  <b>Numerator:</b> ANC Summary Form and Maternity Register
5. Percentage of pregnant women attending at least one ANC visit	Number of pregnant women attending at least one ANC visit	Estimated number of pregnant women during the same period as the numerator	<b>Numerator:</b> ANC Summary Form  <b>Denominator:</b> Population Estimate
6. Percentage of pregnant women attending four ANC visits during their pregnancy	Number of pregnant women attending four ANC visits	Estimated number of pregnant women during the same period as the numerator	<b>Numerator:</b> ANC Registers <b>Denominator:</b> ANC Registers

Indicator	Data Element		Data Source
	Numerator	Denominator	
7. Percentage of HIV infected pregnant women who were assessed for ART eligibility on site or by referral	Number of HIV infected pregnant women who were assessed for ART eligibility by clinical staging and/or CD4 testing	Number of HIV+ pregnant women attending ANC in the last 12 months	<b>ANC Summary Form</b>
8. Percentage of HIV infected pregnant women eligible for ART	Number of HIV infected pregnant women eligible for ART	Number of HIV+ pregnant women assessed for ART eligibility	<b>ANC Summary Form</b>
9. Percentage of HIV infected pregnant women eligible for ART who were initiated on ART	Total number of HIV infected pregnant women who were initiated on ART in the last 12 months	Estimated number of HIV infected pregnant women giving birth in the last 12 months	<b>ANC Summary Form</b>
10. Percentage of HIV infected pregnant women who received antiretrovirals to reduce the risk of MTCT	Total number of HIV infected pregnant women who received ART, plus those who received antiretrovirals to reduce the risk of MTCT (ARV prophylaxis) in the last 12 months	Estimated number of HIV infected pregnant women giving birth in the last 12 months	<b>ANC Summary Form, Delivery register, and Postnatal register</b>
11. Percentage of HIV positive pregnant women initiated on co-trimoxazole prophylaxis	Number of HIV infected pregnant women who received co-trimoxazole prophylaxis	Total number of HIV infected pregnant women with clinical and/or Immunological eligibility for co-trimoxazole	<b>ANC Summary Form</b>
12. Percentage of eligible HIV positive pregnant women initiated on IPT	Number of HIV positive pregnant women initiated on IPT	Total number of HIV positive pregnant women	<b>ANC Summary Form</b>

Indicator	Data Element		Data Source
	Numerator	Denominator	
13. Percentage of HIV positive pregnant women initiated on TB treatment	Number of HIV positive pregnant women initiated on TB treatment	Total number of HIV positive pregnant women	<b>ANC Summary Form</b>
14. Percentage of pregnant women tested for syphilis in ANC	Number of pregnant women tested for syphilis in ANC	Total number of ANC for at least one visit in the last 12 months	<b>Numerator:</b> ANC Summary Form <b>Denominator:</b> Population Estimate
15. Percentage of pregnant women with a positive syphilis test	Number of pregnant women with a positive syphilis test	Total number of pregnant women tested for syphilis	<b>Numerator:</b> ANC Summary Form <b>Denominator:</b> ANC Summary Form
16. Percentage of pregnant women with Hb < 8g/dl	Number of pregnant women with Hb < 8g/dl	Total number of pregnant women who had Hb measured	<b>Numerator:</b> ANC Summary Form <b>Denominator:</b> ANC Summary Form
17. Percentage of pregnant women who received iron supplementation	Number of pregnant women who received iron supplementation	Total number of pregnant women	<b>Numerator:</b> ANC Summary Form <b>Denominator:</b> ANC Summary Form



Indicator	Data Element		Data Source
	Numerator	Denominator	
18. Percentage of ANC clients whose partners attend at least one ANC visit with the client	Number of ANC clients whose partners attend at least one ANC visit with the client	Total number of ANC clients	ANC Register
19. Proportion of partners of ANC clients who know their status	Number of partners of ANC clients who know their status	Total number of ANC clients	ANC Register
<b>Maternity</b>			
20. Percentage of women delivering at a health facility	Number of women delivering at a health facility	Estimated number of pregnant women	<b>Numerator:</b> Maternity Register <b>Denominator:</b> Population Data
21. Percentage of births attended by a skilled attendant	Number of women delivered by a skilled attendant	Estimated number pregnant women	<b>Numerator:</b> Maternity Register <b>Denominator:</b> Population Data
22. Percentage of women given oxytocin during the 3 <sup>rd</sup> stage of labour	Number of women given oxytocin during the 3 <sup>rd</sup> stage of labour	Total number of women delivering in a health facility	<b>Numerator:</b> Maternity Register <b>Denominator:</b> Maternity

Indicator	Data Element		Data Source
	Numerator	Denominator	
			Register
23. Percentage of HIV positive women who received Vitamin A post delivery	Number of HIV positive women who received Vitamin A post delivery	Total number of HIV positive women delivering in health facilities	<b>Numerator:</b> Maternity Register <b>Denominator:</b> Maternity Register
24. Percentage of infants initiating breast feeding within 1 hour of birth	Number of infants initiating breast feeding within 1 hour of birth	Number of live births in health facilities	<b>Numerator:</b> Maternity Register <b>Denominator:</b> Maternity Register
<b>Postnatal</b>			
25. Percentage of women attending PNC within one week	Number of women attending PNC within one week	Estimated number of pregnant women in 1 Year	<b>Numerator:</b> PNC Register <b>Denominator:</b> Population Data
26. Percentage of women attending PNC at 6 weeks	Number of women attending PNC at 6 weeks	Estimated number of pregnant women in 1 Year	<b>Numerator:</b> PNC Register <b>Denominator:</b> Population Data
27. Percentage of women receiving family planning	Number of women receiving PNC including family planning services	Estimated number of pregnant	<b>Numerator:</b> PNC

Indicator	Data Element		Data Source
	Numerator	Denominator	
services at PNC (disaggregate by HIV status)	(counselling, commodities, or referral if necessary)	women	Register <b>Denominator:</b> Population Data
28. Percentage of women receiving screening for cervical cancer at 14 weeks post delivery (disaggregate by VIA or pap smear)	Number of women eligible for cervical cancer screening who received it at 14 weeks post delivery	Estimated number of eligible pregnant women	<b>Numerator:</b> PNC Register <b>Denominator:</b> Population Data
<b>Under-five</b>			
29. Percentage of HIV exposed infants who are exclusively breast feeding at 6 months of age	Number of HIV exposed infants who are exclusively breast feeding at or around 6 months of age	Number of HIV exposed infants at or around 6 months of age who attended the under-5 clinic	<b>Under-5 Register</b>
30. Percentage of HIV exposed infants who are replacement feeding at 6 months of age	Number of HIV exposed infants who are replacement feeding at or around 6 months	Number of HIV exposed infants at or around 6 months of age who attended the under-5 clinic	<b>Under-5 Register</b>
31. Percentage of HIV exposed infants who are mixed feeding at 6 months of age	Number of HIV exposed infants who are mixed feeding at or around 6 months	Number of HIV exposed infants at or around 6 months of age who attended the under-5 clinic	<b>Under-5 Register</b>
32. Percentage of HIV exposed infants who received NVP	Total number of HIV exposed infants who received NVP for 6 weeks to	Estimated number of HIV infected	<b>Numerator:</b> Under-5 Register (and ANC

Indicator	Data Element		Data Source
	Numerator	Denominator	
for 6 weeks post natal to reduce the risk of MTCT transmission	reduce the risk of MTCT	women delivering live births	Summary form) <b>Denominator:</b> Population Estimate
33. Percentage of HIV exposed infants initiated on co-trimoxazole prophylaxis within two months of birth	Number of HIV exposed infants who initiated co-trimoxazole prophylaxis within two months of birth in the last 12 months	Estimated number of HIV infected women delivering live births in the last 12 months	<b>Under-five Register</b>
34. Percentage of exposed infants who received a DNA PCR test for HIV in the first 2 months of life (disaggregate by test result)	Number of exposed infants who received a DNA PCR test for HIV in the first 2 months of life	Estimated number of HIV infected pregnant women giving birth in the last 12 months	<b>Under-five Register</b> <b>DNA PCR Database</b>
35. Percentage of exposed infants with a confirmed positive 1 <sup>st</sup> DNA PCR within the first 2 months of life	Total number of HIV exposed infants with a confirmed positive 1 <sup>st</sup> DNA PCR within the first 2 months of life	Number of HIV exposed infants with a positive 1 <sup>st</sup> DNA PCR within the first 2 months of life	<b>Under-five Register</b> <b>DNA PCR Database</b>
36. Percentage of HIV exposed infants who are breastfeeding and taking NVP prophylaxis to reduce the risk of HIV transmission,	The number of HIV exposed infants who are breastfeeding and taking NVP prophylaxis to reduce the risk of HIV transmission, at 12 months of age	Total number of HIV exposed infants at 12 months of age who are breastfeeding and whose mothers are not on ART.	<b>Under-five Register</b>

Indicator	Data Element		Data Source
	Numerator	Denominator	
at 12 months of age			
37. Percentage of HIV exposed infants, with negative 1 <sup>st</sup> DNA PCR, who are confirmed to be definitively HIV infected at the end of the breastfeeding period	Number of HIV exposed infants, with negative 1 <sup>st</sup> DNA PCR, who are confirmed to be definitively HIV infected at the end of the breastfeeding period	Total number of breastfed HIV exposed infants with negative 1 <sup>st</sup> DNA PCR	<b>Under-five Register DNA PCR Database</b>
<b>Impact</b>			
38. Percentage of infants born to HIV infected mothers who are infected with HIV	Weighted averages from modelling	Weighted averages from modelling	<b>Modelled Source (Under-five Register, DNA PCR Database, HTC Report, ANC Register)  Population Data</b>
39. Percentage of estimated HIV infections averted in HIV exposed infants	Number of estimated HIV infections averted in infants from mother to child transmission (weighted averages from modelling)	Total number of exposed infants born	<b>Modelled Source  Population Data</b>
40. Percentage of infants born to HIV infected mothers with definitive negative HIV status at the end of HIV	Number of infants born to HIV infected mothers with definitive negative HIV status at the end of HIV exposure	Estimated number of HIV infected pregnant women giving birth in the last 12 months	<b>Under-five Register, DNA-PCR Database, HTC Report, ANC</b>

Indicator	Data Element		Data Source
	Numerator	Denominator	
exposure (disaggregate by ARV regimen and breastfeeding status)			Register Population Data
<b>Cross-cutting indicators</b>			
41. Percentage of women who tested HIV negative in ANC and then tested HIV positive anytime after 36 weeks gestation (e.g. ANC, L&D, PNC)	Number of women who tested HIV negative in ANC and then tested HIV positive anytime after 36 weeks gestation (e.g. ANC, L&D, PNC)	Total number of women who initially tested HIV negative	HTC Report, ANC Register Maternity Register PNC register