

# **PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV**

## **GUIDELINES**

**2<sup>nd</sup> Edition 2006**



**Swaziland**

**Ministry of Health and Social Welfare**

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# Contents

<b>ABBREVIATIONS</b>	<b>5</b>
<b>LIST OF TABLES, FIGURES AND ANNEXES</b>	<b>6</b>
<b>CHAPTER 1: INTRODUCTION</b>	<b>8</b>
1.1 Background	8
1.2 Prevention of Mother to Child Transmission of HIV services	9
<b>CHAPTER 2: COUNSELLING AND TESTING</b>	<b>11</b>
2.1 Approach	11
2.2 Purpose of routine offer of HIV testing and counselling (HTC) in PMTCT Settings	11
2.3 Guiding Principles for Counselling and Testing in PMTCT Settings	12
2.4 Pre-test Counselling for HIV	11
2.5 Post-test counselling for HIV	13
2.6 Testing algorithm in Swaziland	14
2.7 Infant diagnosis	15
2.8 HIV diagnosis in children from 18 months of age	17
2.9 Quality Assurance in HIV Testing	18
<b>CHAPTER 3: PREVENTION OF MOTHER TO CHILD TRANSMISSION INTERVENTIONS</b>	<b>19</b>
3.1 Integration of PMTCT in maternal and child health services	19
3.2 Follow up for HIV positive pregnant women	19
3.3 Intrapartum care	19
3.4 Management of women with unknown HIV status during labour and delivery	20
3.4 Management of women with unknown HIV status during labour and delivery	20
3.5 Care of the mother after delivery	20
<b>CHAPTER 4: ANTIRETROVIRAL DRUGS IN PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV</b>	<b>22</b>
4.1 ARV prophylaxis for PMTCT	22
4.2 Women eligible for HAART	22
4.3 ARV prophylaxis for pregnant women not eligible for HAART	23
4.4 Optional regimen: AZT + SD-NVP + AZT/3TC	24
4.5 ARV prophylaxis for women identified during labour	24
4.6 ARV prophylaxis for infants whose mothers did not receive ARV prophylaxis during pregnancy and during labour	24
4.7 Women on HAART who become pregnant	25
4.8 Considerations for special cases	25
4.9 Safety of ARV Drugs for Pregnant Women and Infants	26
<b>CHAPTER 5: MANAGEMENT OF INFANTS IN THE ERA OF HIV</b>	<b>28</b>
5.1 Care of new born babies	28
5.2 Care for HIV exposed infants and children	28
5.3 Mother to child transmission and breastfeeding	29
5.4 Replacement feeding during the first 6 months of life	31
5.5 Clinical Management of HIV Exposed Infants and Children	31
5.6 Regular Follow-up Care	32
5.7 Referrals/Linkages to specialised care and support	32

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<b>CHAPTER 6: ESTIMATING SUPPLY REQUIREMENTS, MONITORING AND EVALUATION OF PMTCT PROGRAM</b>	<b>34</b>
6.1 Estimating supply requirements	34
6.2 Storage and distribution of PMTCT commodities	35
6.3 Monitoring and evaluation	35
6.4 Record keeping	35
6.5 Structure for the flow of report from the facilities	35



## ABBREVIATIONS

3TC	Lamivudine
AFASS	Acceptable, feasible, affordable, sustainable and safe
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal care
ARM	Artificial rupture of membranes
ARV	Antiretroviral
ART	Antiretroviral therapy
AZT	Zidovudine
BCG	Bacilli Calmin Guerin
CMV	Cytomegalo virus
CMS	Central Medical Stores
CNS	Central nervous system
C/S	Caesarean section
CT	Counselling and Testing
CTX	Cotrimoxazole
d4T	Stavudine
ddI	Didanosine
DNA	Deoxyribonucleic acid
EFV	Efavirenz
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
EQA	External quality assurance
FBO	Faith Based Organization
HAART	Highly active antiretroviral therapy
HTC	HIV testing and counselling
HIV	Human Immunodeficiency Virus
ICAP	International Centre for AIDS Care and Treatment Programs
INH	Isoniazid
IQA	Internal quality assurance
LGE	Lineal gingival erythema
LIP	Lymphoid Interstitial Pneumonitis
LFT	Liver function test
MOH&SW	Ministry of Health and Social Welfare
M&E	Monitoring and Evaluation
MTCT	Mother-to-Child Transmission of HIV
MCH	Maternal and Child Health
NFV	Nelfinavir
NGO	Non-Governmental Organization
NRL	National Reference Laboratory
NVP	Nevirapine
PCP	Pneumocystis Carinii Pneumonia
PCR	Polymerase Chain Reaction
PLWHA	People living with HIV/AIDS
PEP	Post Exposure Prophylaxis
PMTCT	Prevention of Mother-to-Child Transmission of HIV
PML	Progressive multi-focal leukoencephalopathy
PGL	Persistent generalized lymphadenopathy
QA	Quality Assurance
RFM	Raleigh Fatkin Memorial Hospital
RFT	Renal Function Test
RHMT	Regional Health Management Team
RNA	Ribonucleic acid

SINAN	Swaziland Infant Nutrition Action Network
SMX	Sulphamethoxazole
SRHU	Sexual and Reproductive Health Unit
SD-NVP	Single dose Nevirapine
STI	Sexually transmitted infection
SS	Single strength
SQV/	Sraquinavir/ritonovir
TB	Tuberculosis
TLC	Total lymphocyte count
TMP	Trimethoprim
UNAIDS	United Nations Joint Action on AIDS
UNICEF	United Nations Children's Fund
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

## LIST OF TABLES, FIGURES AND ANNEXES

### TABLES

- Table 1: Periods, timing and estimated rates of transmission
- Table 2: Risk Factors for mother to child transmission of HIV during pregnancy, labour and delivery and breastfeeding
- Table 3: Selected information given to HIV negative and positive women during post-test Counselling
- Table 4: Internal quality control factors
- Table 5: Recommended first line ARV treatment regimen for pregnant women and prophylaxis for Infants
- Table 6: AZT/SD-NVP prophylaxis regimen to prevent MTCT
- Table 7: Minimum intervention: SD-NVP regimen
- Table 8: Recommended ARV prophylaxis regimen to prevent MTCT in facilities with sufficient capacity.
- Table 9: Recommended ARV regimen to prevent MTCT for HIV positive mothers identified during labour.
- Table 10: Recommended ARV regimen for infants whose mothers did not receive ARV prophylaxis during pregnancy or during labour
- Table 11: Antiretroviral prophylaxis regimens and drug doses to prevent MTCT
- Table 12: ARV Drugs Adverse Effects and Toxicity
- Table 13: Cotrimoxazole Prophylaxis dosages
- Table 14: Example of yearly national estimates for PMTCT

### FIGURES

- Figure 1: Rapid HIV Testing Algorithm for Serial Testing in PMTCT
- Figure 2a: HIV diagnosis in non-breastfeeding infants
- Figure 2b: HIV diagnosis in breastfeeding infants
- Figure 3: HIV diagnosis in non-breastfeeding and breastfeeding children
- Figure 4: Steps for counselling mothers infected with HIV about infant feeding

### ANNEXES

- Annex 1: Services provided to ANC clients at first and subsequent visits
- Annex 2: WHO clinical staging for adults and adolescents\
- Annex 3: PMTCT and ART Integration Framework
- Annex 4: Package of services provided to women and children during follow-up visits
- Annex 5: WHO paediatric clinical staging
- Annex 6: A) Clinical Signs or Conditions in a child that may suggest HIV Infection  
B) IMCI Clinical Signs or Conditions in a child that may suggest HIV Infection
- Annex 7: Prevention of Mother to Child HIV Transmission (PMTCT) monthly Report Form
- Annex 8: Structure for the flow of report from the facilities



# FOREWORD

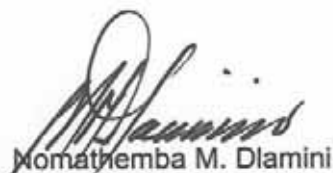
Mother-to-Child Transmission (MTCT) is by far the largest source of HIV infection in children. According to UNAIDS estimates, more than 90 percent of children acquire HIV through MTCT during pregnancy, during labor and delivery or after delivery through breastfeeding. HIV exposed or infected infants have a high probability (50%) of dying in the first two years of life. Prevention of mother to child transmission (PMTCT) services provides an entry point to prevention of HIV transmission to infants and care and treatment for the entire family.

The high HIV prevalence among pregnant women of 42.6% (MOH&SW Sentinel Surveillance 2004) indicates that if interventions to prevent MTCT are not scaled-up, paediatric HIV infections will continue to reverse the gains made in child survival through EPI and safe motherhood initiatives.

In the light of the above, the Government of the Kingdom of Swaziland is committed to providing equitable access to cost effective and quality health care as close to the family as possible through the involvement of community-based health workers. It is within this context that the Ministry of Health and Social Welfare (MOH&SW) is working towards increasing access to PMTCT, Care and Treatment services for all pregnant women, mothers, infants and their families. This will be achieved through the expansion and integration of PMTCT services into routine maternal and child health (MCH) services.

PMTCT has been identified as a viable intervention to reduce new HIV infections through a four prong approach: 1) primary prevention of HIV infection among women of child bearing age, 2) prevention of unintended pregnancies among HIV infected women; 3) prevention of HIV transmission from HIV infected mothers to the infants and 4) provision of continuous care and treatment for infected mothers, partners and their children. Therefore implementation of a PMTCT programme includes establishment of linkages to other support programmes within the framework of a continuum of care for people infected and affected by HIV.

This 2<sup>nd</sup> Edition is an update of the PMTCT Guidelines developed in 2002 and has incorporated new WHO recommended public health approaches in HIV Prevention, Care and Treatment. I trust that health care workers will use the guidelines to strengthen and sustain integrated PMTCT, care and treatment services at all levels of the health care system.



Nomathemba M. Dlamini

**Principal Secretary, Ministry of Health and Social Welfare**



# CHAPTER 1

## INTRODUCTION

### 1.1 Background

Swaziland, a small landlocked country with a population of about 1.1 million people who primarily reside in rural areas, has one of the highest HIV prevalence rates in the world (UNAIDS 2004). The first case of HIV was identified in Swaziland in 1986 and since then the number of newly infected persons has been increasing each year. At present, it is estimated that about 220,000 people in Swaziland are living with HIV and AIDS. In 2003 alone, HIV and AIDS related deaths among adults and children were estimated at 17,000 out of approximately 30,000 crude deaths. In 2004, the number of orphans was estimated at 69,000. This constitutes a social burden that is becoming more difficult to cope with. In addition, more than 26,000 adults and children are in urgent need of antiretroviral therapy.

Approximately 40,000 deliveries are registered every year. With HIV prevalence among pregnant women of 42.6%, (MOH&SW Sentinel Surveillance 2004) approximately 17,000 infants exposed to HIV are delivered annually. PMTCT services were started in 2003 and by end of 2005, 14% of possible HIV infected pregnant women received complete course of PMTCT prophylaxis (Routine National Program Monitoring Reports). Uptake of PMTCT by pregnant women is increasing but very few exposed infants, children, pregnant women and postnatal women access HIV care and treatment. In addition, men do not often come forward to test for HIV, thus missing the opportunity to make informed life long decisions regarding their own health and the health of their entire family.

Table 1 below shows the periods and rates of transmission and estimated number of infants exposed to HIV annually if PMTCT services are not put in place.

**Table 1: Periods, timing and estimated rates of transmission**

Period of Transmission	Transmission Rate %*	Estimated annual number of exposed children in Swaziland =17000
Pregnancy	5-10	850-1700
Labour and delivery	15-20	2550-3400
Breastfeeding	10-15	1700-2550
Overall for 24 months	30-45	5100-7650

Source: \*Adapted from de Cock, 2002

As shown in Table 1, the rate of transmission is higher during labour and delivery. This is why it is important for health workers to apply acceptable obstetric practices during pregnancy, delivery and labour to reduce MTCT. Table 2 highlights the risk factors related to MTCT during these three critical

**Table 2: Risk Factors of mother to child transmission during pregnancy, labour and delivery, and breastfeeding**

Pregnancy	Labour and Delivery	Breastfeeding
<ul style="list-style-type: none"> <li>▪ Unprotected sex</li> <li>▪ High maternal viral load</li> <li>▪ Low maternal CD4 count</li> <li>▪ Viral or bacterial Infections</li> <li>▪ Parasitic infections</li> <li>▪ Sexually transmitted infections (STIs)</li> <li>▪ Maternal malnutrition</li> <li>▪ Anaemia</li> <li>▪ External cephalic version (ECV)</li> <li>▪ Chorioamnionitis (from untreated STI or other infections)</li> </ul>	<ul style="list-style-type: none"> <li>▪ High maternal viral load (especially HIV infection during pregnancy)</li> <li>▪ Low maternal CD4 count</li> <li>▪ Rupture of membranes more than 4 hours before delivery</li> <li>▪ Invasive delivery procedures (e.g., episiotomy, artificial rupture of membranes, amniocentesis, vacuum or forceps) increase exposure of the baby to mother's infected blood or body fluids</li> <li>▪ Chorioamnionitis (from untreated STI or other infection)</li> <li>▪ Premature delivery</li> <li>▪ Low birth weight</li> <li>▪ Breaks in the skin or mucous membranes of the baby</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Breastfeeding</b></li> <li>▪ High maternal viral load (especially recent infection)</li> <li>▪ Low maternal CD4 count</li> <li>▪ Duration of breastfeeding</li> <li>▪ Mixed feeding (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., thrush or sores)</li> </ul>

## 1.2 Prevention of mother to child transmission of HIV services

PMTCT services serve as an entry point to prevention of HIV and continuous follow-up and care of exposed infants, HIV-infected women, children and families. Strategically, HIV infection in women and infants can be prevented through the four prongs:

- Prong 1: Primary prevention of HIV infection among women of child bearing age
- Prong 2: Prevention of unintended pregnancies among HIV positive women
- Prong 3: Reduction of MTCT among HIV positive pregnant women
- Prong 4: Care, support and treatment for HIV positive women and their families

Although PMTCT focuses on Prongs 3 and 4, clients should be given information on Prongs 1 and 2. Regarding Prong 1, emphasize that PMTCT is an entry point for prevention of HIV infection for those mothers who test negative during routine offer of testing and counseling and promote safer sexual behavior during pregnancy and lactation period because of the increased risk of MTCT during these periods and encourage HIV positive pregnant women and mothers to access and adhere to care, support and treatment services in Prong 4.

With respect to Prong 2, provide information on reproductive choice as part of routine counseling in ANC and post-natal care tailored according to HIV status of the client e.g. importance of family planning to prevent unwanted pregnancies and spread of HIV.

### 1.2.1 Benefits of prevention of mother- to-child transmission services

PMTCT has the potential to increase access to care, support and treatment of HIV infected and affected families, and to reverse the devastating impact of HIV on child survival.

The following are direct benefits of PMTCT services:

- Reduced number of new HIV infection among children
- Improved child survival
- Provide opportunity to early and comprehensive care for the mother, partner and family members in need of HIV services.

# CHAPTER 2

## COUNSELLING AND TESTING

### 2.1 Approach

Counselling and testing is an integral part of ANC, labour and delivery and postnatal services. Inform pregnant women and mothers individually or in a group during health education of all the blood tests offered in the facility e.g. haemoglobin level, syphilis and HIV tests in ANC, labour and delivery and postnatal services. Counsel all women and offer HIV test routinely. Respect the client's right to decline taking any of the tests and accord her the opportunity to take the test during the subsequent visits. It is also critical to test family planning clients for HIV to enable women who test HIV positive to make informed decisions about their reproductive health, including clients suffering from STIs and skin conditions. If your facility, does not offer the latter services, refer clients to nearest facilities for further management if you suspect STI or skin conditions.

HIV testing offers an opportunity to counsel women on risk reduction and prevention of HIV infection. Therefore offer all pregnant women the chance to test for HIV during ANC and first stage of labour. Encourage male partners to test for HIV because knowledge of HIV status among couples will improve uptake of PMTCT and subsequent care, support and treatment services.

All MCH staff are responsible and should provide information and support to women on the importance of knowing their HIV status.

### 2.2 Purpose of routine offer of HIV testing and counselling (HTC) in PMTCT Settings

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

- Reducing stigma associated with both HTC and HIV infection
- Reaching a high percentage of pregnant women.
- Ensuring continuous counselling and support for HIV positive ANC women and mothers, including those who decline to test for HIV at the initial contact in PMTCT settings.
- Identifying HIV positive women and affected family members so that they can access care, support and treatment
- Reinforcing safer sexual practices in preventing the spread and/or acquisition of HIV
- Enabling HIV positive clients to access care, support and treatment early.

#### **Objectives:**

- Improve the quality of maternal and child health services in the era of HIV
- Promote and roll out the first national priority in the fight against HIV as part of the National Health Sector Response Plan
- Mitigate the impact of HIV among pregnant women, mothers, exposed infants, children and families
- Sustain HIV testing as an entry point to care, support and treatment for HIV positive pregnant women, mothers, exposed infants, children and families.

- Encourage risk-reducing behaviour and use of condoms to prevent HIV infection during pregnancy and lactation.
- Explore and encourage disclosure and partner testing for individuals to access care, support and treatment
- Encourage continuous counselling at all subsequent visits and follow-up visits for mothers

### **2.3 Guiding Principles for Counselling and Testing in PMTCT Settings**

All health care workers should hold the principles of HIV testing and counselling in all interactions with clients in PMTCT and related HIV services:

#### ***Confidentiality:***

- Maintain confidentiality in order to establish and maintain clients' trust. Keep private information shared between health care provider and the client.
- Inform clients that personal medical information, including HIV test results, may be disclosed to other healthcare workers (shared confidentiality) for the purpose of ensuring that the client receives the appropriate medical care at all visits.
- Store all medical records and registers, whether or not they include HIV-related information.

#### ***Informed consent:***

- HIV testing in ANC is routinely offered therefore written informed consent for HIV testing is not required. Health worker should ensure that the following elements of informed consent are addressed:
  - Understanding of the purpose and benefits of HIV testing in HIV prevention, care, support and treatment
  - Client's decision to opt out of testing is respected.

### **2.4 Pre-test Counselling for HIV**

The following information should be provided to all women during pre-test counselling:

- Personal hygiene
- Maternal nutrition
- Family planning
- Routine blood tests including HIV testing in pregnancy
- HIV transmission and prevention
- Importance of:
  - Sharing results with partners and or family member (disclosure)
  - ARV prophylaxis for PMTCT and therapy
  - Couple counselling
  - Delivering in health facilities
- New born care and infant feeding options
- Interaction between HIV and other diseases like STIs and TB

#### ***Couple Counselling:***

Couple counselling increases support for a woman who tests positive for HIV and accords the couple the chance to make informed decisions on living positively with HIV; encourages male partners to accept HIV testing and counselling; acknowledges the importance of the partner's presence and shared responsibility for preventing transmission of HIV to an unborn child. Testing both partners together as a couple accords them opportunities to discuss safer sex practices, creates a supportive environment for each other and to make informed decisions to access care and treatment.

## 2.5 Post-test counselling for HIV

Post-test counselling provides an opportunity for HIV-negative and positive clients to know their results. HIV infected clients need to know how to protect themselves and their infants from HIV infection, infection occurring during pregnancy or during breastfeeding is associated with a higher risk of MTCT. Concomitantly, HIV positive clients also require information during individual or couple post-test counselling on how to protect their unborn children and how to live positively with HIV.

### **Objectives:**

- Provide the client with the HIV test result
- Help the client understand the meaning of the result
- Provide the appropriate PMTCT information included in the pre-test counselling
- Encourage risk-reducing behaviour and use of condoms to prevent HIV infection during pregnancy and lactation
- Explore and encourage disclosure and partner testing for individuals to access care, support and treatment
- Encourage continuous counselling at all subsequent visits and follow-up visits for mothers

During initial post-test counselling, revisit pre-test information and reinforce it and/or fill the gaps before disclosing the result. Give client time to assimilate the results and to ask questions if any. Emphasize to the client the importance of disclosure i.e. informing significant others of the test result e.g. her partner and other confidants friend and/or family member(s). By disclosing her HIV status, it is likely that the client will be in a better position to:

- Encourage the partner(s) to test for HIV
- Prevent the transmission of HIV to her partner(s)
- Access and adhere to care, support and treatment services
- Prevent the transmission of HIV to the baby

Table 3 below indicates important information, which should be given to HIV negative and positive women during post-test counselling.

**Table 3: Selected information given to HIV negative and positive women during post-test counselling**

HIV negative women	HIV positive women
<ul style="list-style-type: none"> <li>▪ Safer sex practices with partner(s) especially condom use to prevent HIV infection during pregnancy and during breastfeeding</li> <li>▪ Importance of family planning or child spacing</li> <li>▪ Understand the meaning of discordance</li> <li>▪ Encourage partner testing – emphasize to the client that it is possible that the partner could be infected by HIV therefore MTCT can occur during the current pregnancy</li> <li>▪ Understand the need to repeat HIV testing three months after the initial testing because of the window period.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reinforce key PMTCT messages given in pre- test counselling, including infant feeding</li> <li>▪ Encourage the client to attend the facility for continuous follow-up counselling, care, support and treatment</li> <li>▪ Emphasize the importance of adhering to treatment if necessary</li> <li>▪ Explore and encourage partner testing - emphasize to the client that it is possible that the partner could be HIV negative.</li> <li>▪ Give client appointment for the next return visit.</li> </ul>

## 2.6 Testing algorithm in Swaziland

Presently, WHO/UNAIDS serial testing algorithm is used (Figure 1).

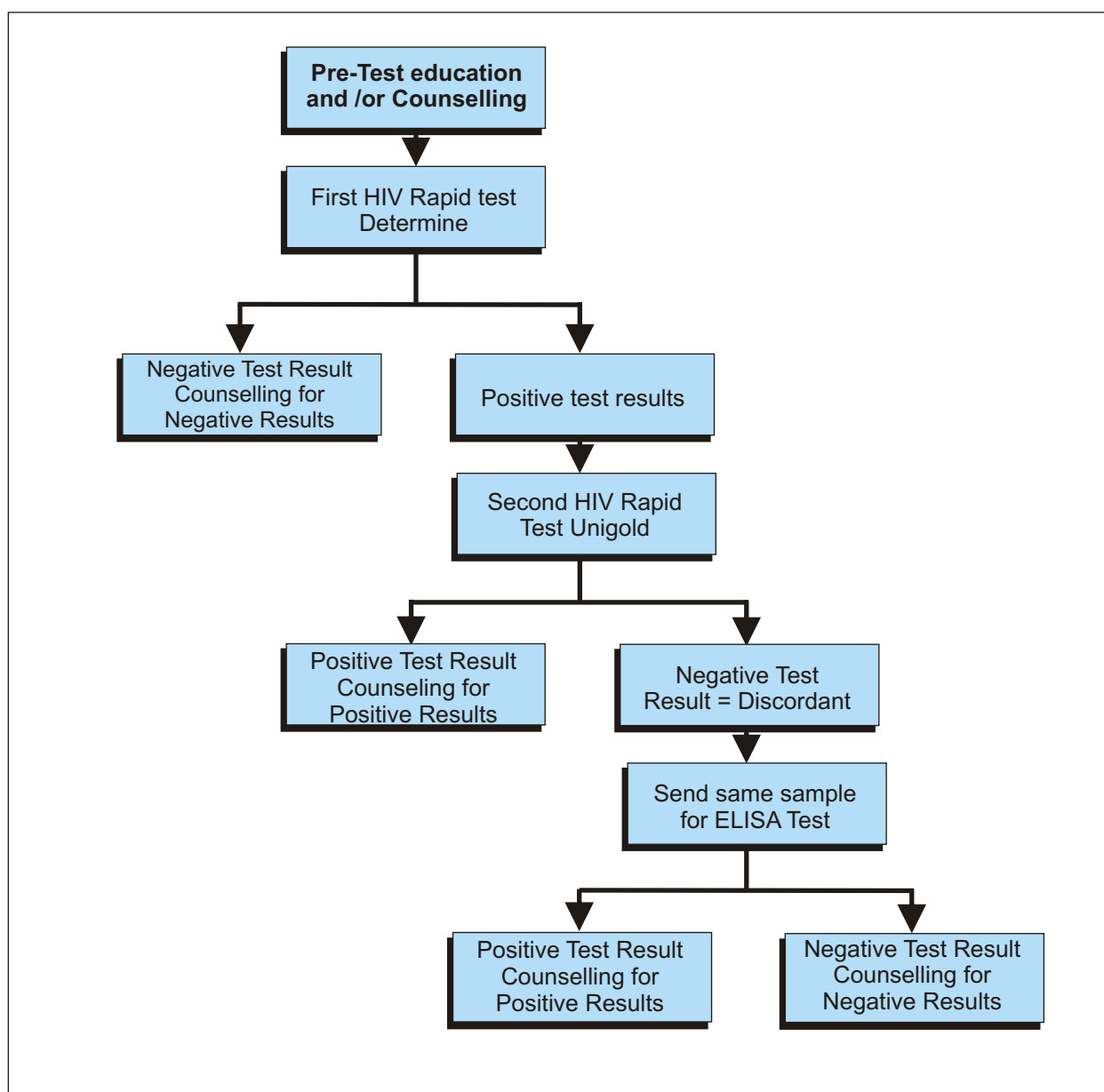
The following tests can be used for HIV testing:

*Antibody detecting assays - Determine, Unigold and Elisa.* If the Determine test is positive, then Unigold is used as the second test to confirm the positive results.

*Interpretation of HIV test results:*

- If determine test gives a negative result, the test is negative.
- If both Determine and Unigold tests results are positive, the result is positive for HIV.
- If Determine test is positive and Unigold test is negative, or Determine test is negative and Unigold test is positive, the result is discordant. Send the same specimen to the laboratory to be tested with an ELISA test (tiebreaker).

Figure 1: Rapid HIV Testing Algorithm for Serial Testing in PMTCT

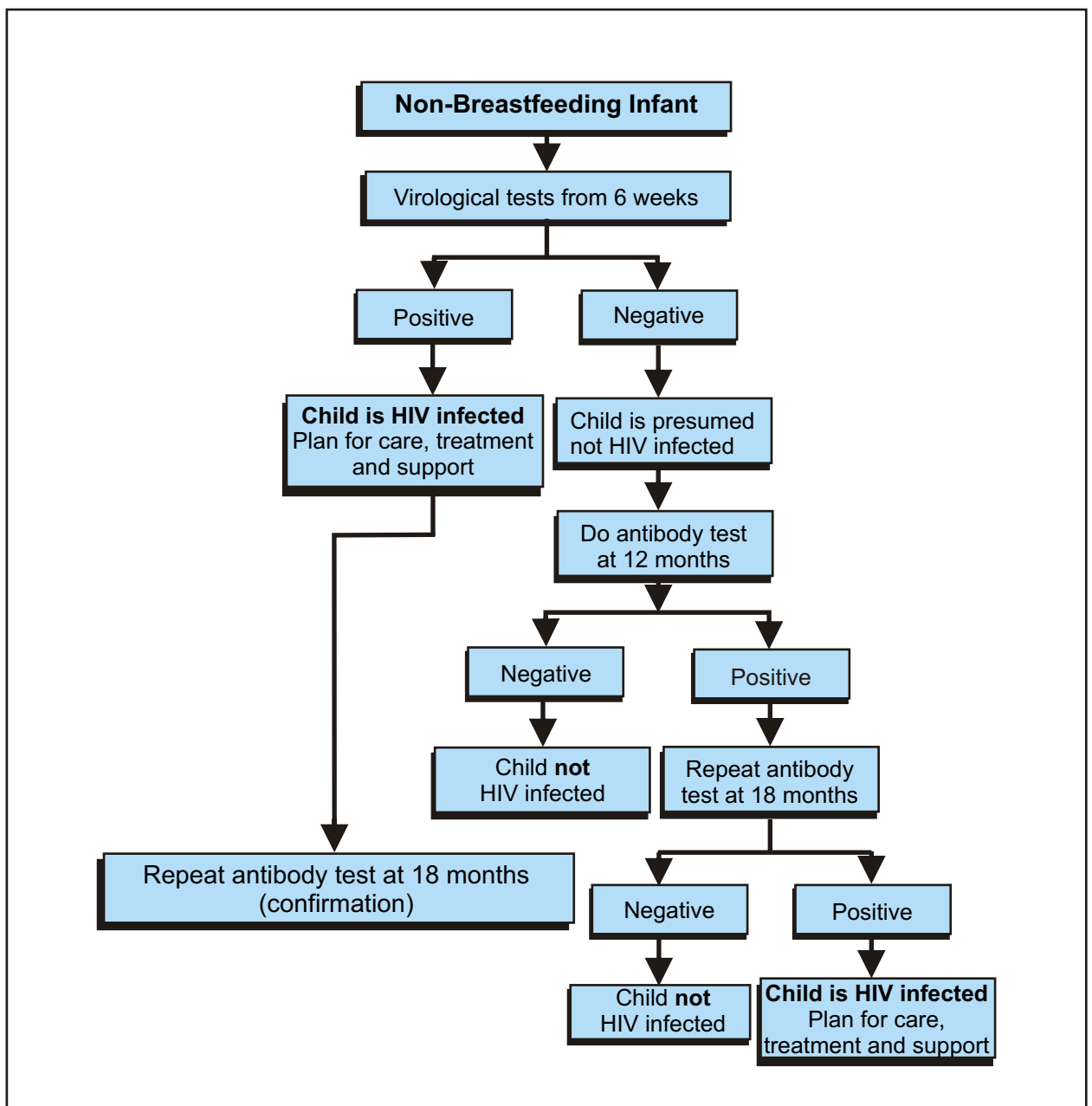


## 2.7 Infant diagnosis (Figures 2a and 2b)

HIV exposed infants and young children have maternal antibodies passively transferred to them from their mothers. Therefore antibody tests before 18 months of age should be avoided because the test cannot confirm HIV infection.

HIV antibody test may be done at 12 months for infants who are not breastfeeding or for infants who stopped breastfeeding for at least 3 months prior to the test. If the antibody test is negative then the baby is not HIV infected. A repeat antibody test should be done at 18 months. Rapid Determine and Eliza tests are used to detect antibodies in children after 18 months.

**Figure 2a: HIV diagnosis in non-breastfeeding infants**

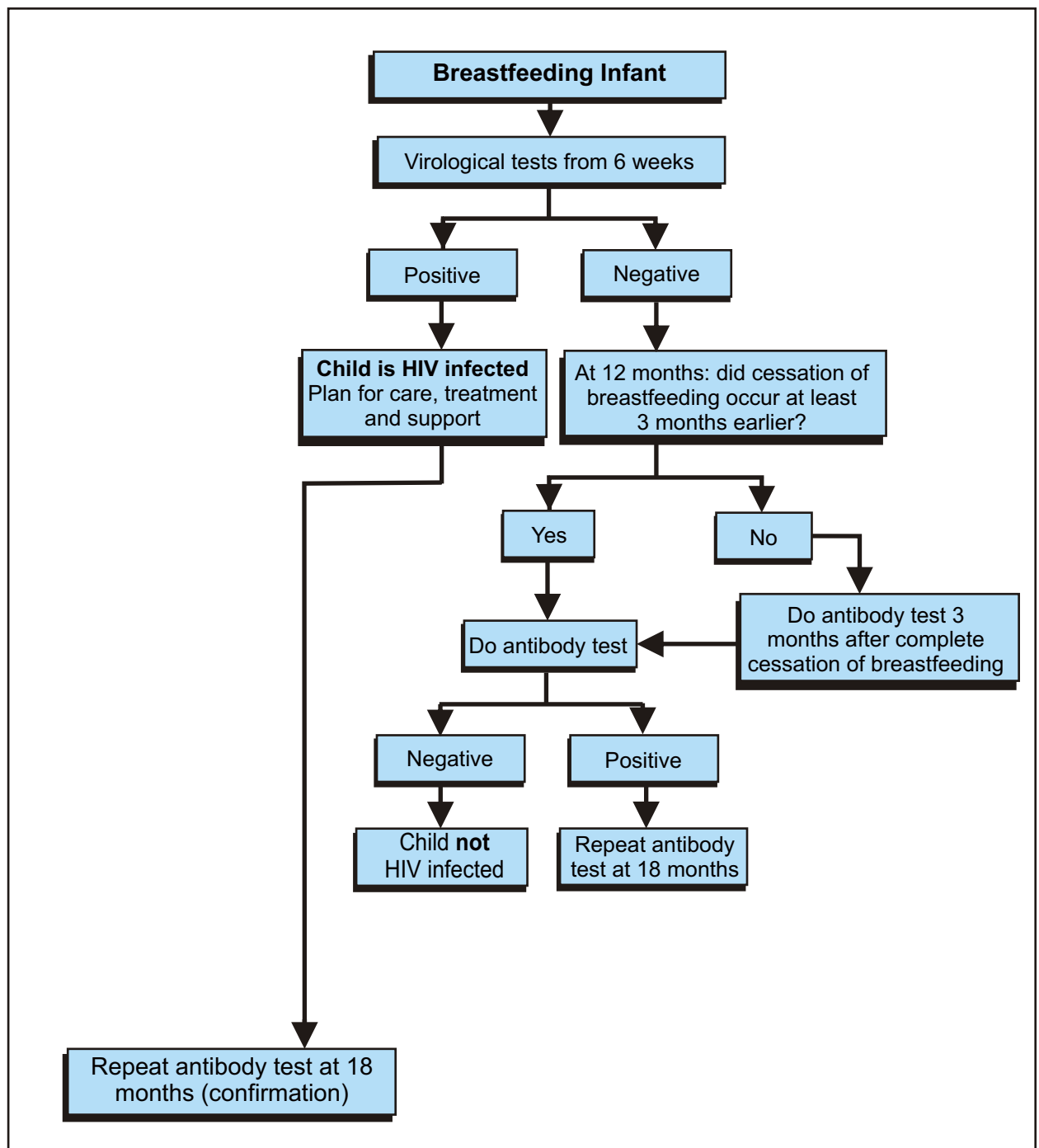


*\*Note RNA PCR is not reliable if the infant was exposed to prophylactic antiretroviral medicines e.g. Nevirapine or Zidovudine because the viral loads may be suppressed to undetectable levels. Therefore the RNA PCR should be used with caution.*

Virology testing should be done for definitive diagnosis of HIV infection in children < 18 months of age. This will confirm infection if the test is positive. A negative test only confirms absence of infection if the child is not breastfeeding and child stopped breast feeding three months prior to the test. Babies continue to be at risk of HIV transmission as long as they are breastfeeding.

The virology tests that can be done are HIV RNA PCR, HIV DNA PCR and ICD. These tests are more reliable if done from the age of 6 weeks (usual post natal visit.) but they are currently limited in Swaziland. Virology tests should be done as early as possible from 6 weeks of age.

**Figure 2b: HIV diagnosis in breastfeeding infants**

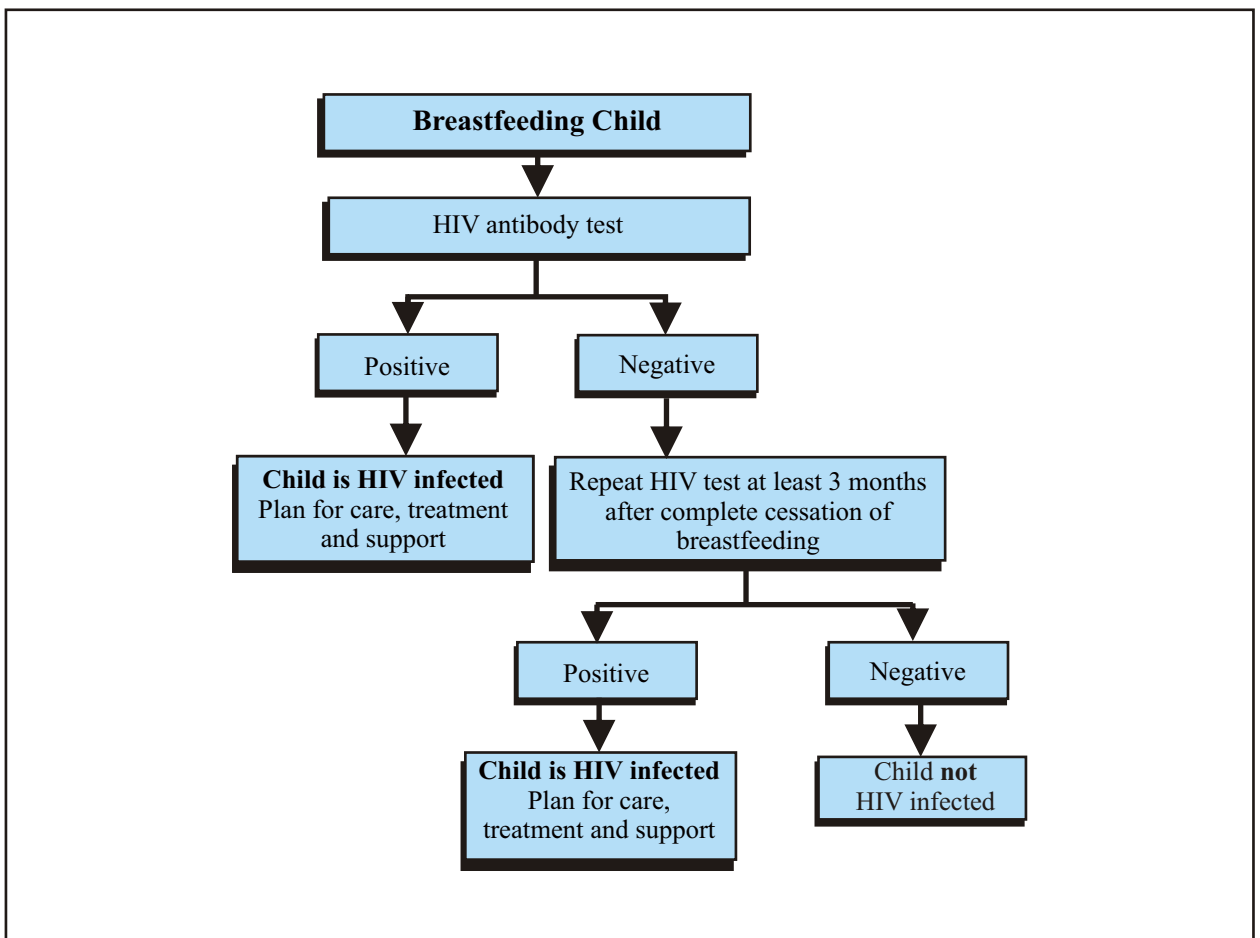
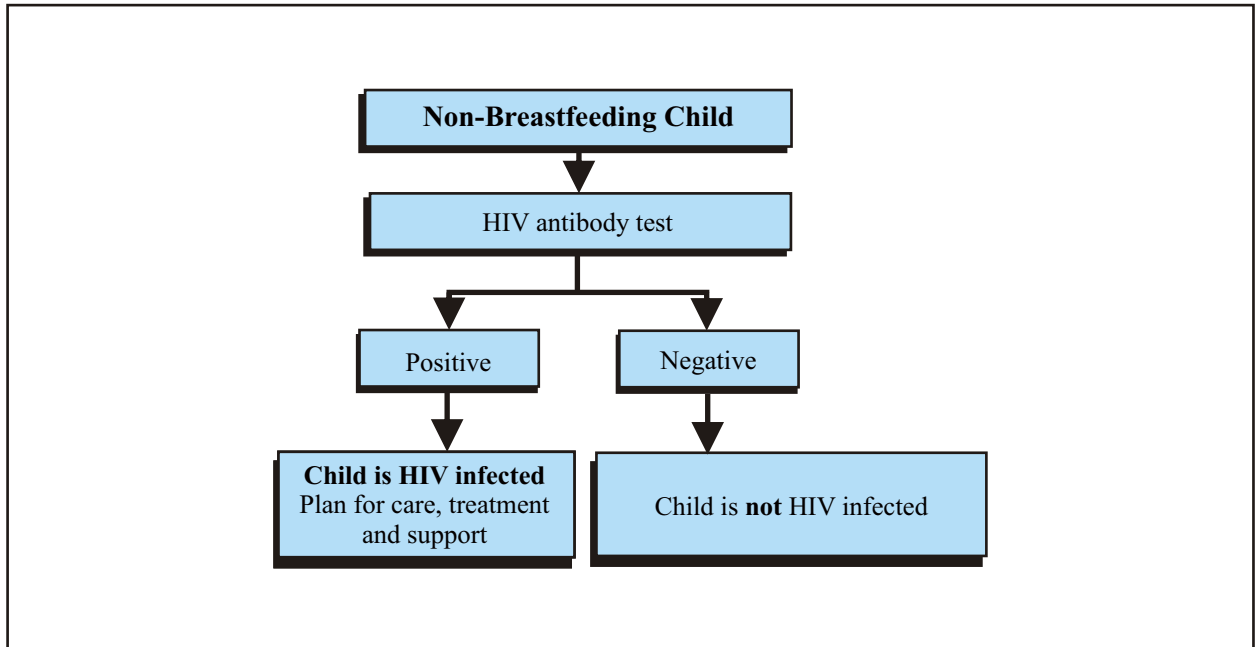


\*Note RNA PCR is not reliable if the infant was exposed to prophylactic antiretroviral medicines e.g. Nevirapine or Zidovudine because the viral loads may be suppressed to undetectable levels. Therefore the RNA PCR should be used with caution.

## 2.8 HIV diagnosis in children from 18 months of age

The flow charts in Figure 3 show the steps taken to diagnose HIV in children from 18 months of age.

**Figure 3: HIV diagnosis in non-breastfeeding and breastfeeding children**



## 2.9 Quality Assurance in HIV Testing

Quality Assurance (QA) is a programme that ensures that the results given to clients during post-testing counselling are as accurate as possible. It consists of two levels: (1) Internal quality assurance (IQA) at facility level and external quality assurance (EQA) at the laboratory.

### **Internal Quality Assurance:**

Internal QA is an essential part of comprehensive PMTCT service delivery. Table 4 indicates factors that enhance or affect the quality of HIV testing in PMTCT settings.

**Table 4: Internal quality control factors**

Pre-analytical factors	Analytical factors	Post analytical factors	Test performance and hence good test results factors
<ul style="list-style-type: none"> <li>▪ Proper sample collection procedures</li> <li>▪ Proper Labelling</li> </ul>	<ul style="list-style-type: none"> <li>▪ Use required sample volume per test</li> <li>▪ Use proper buffer solution per test</li> <li>▪ Time the tests correctly</li> </ul>	<ul style="list-style-type: none"> <li>▪ Interpret results accurately</li> <li>▪ Record results Accurately</li> <li>▪ Keep records in a lockable cupboard</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proper storage and handling of test kits</li> <li>▪ Changes in the environment</li> <li>▪ Accurate calibration of equipment (external and internal Controls)</li> <li>▪ Following recommended sample collection technique</li> <li>▪ Quality of sample</li> <li>▪ Correct use of equipment</li> </ul>

*Be cognizant of the above factors at all times in order to sustain the quality of HIV testing.*

### **External quality assurance:**

Health care workers providing PMTCT services should send all samples used for HIV testing to the National Reference Laboratory (NRL) for QA either daily or weekly depending on availability of transport. The NRL will randomly test 5-10% of the samples and will give feedback to the facilities on the quality of the tests carried out.

Laboratory safety precautions should be followed based on recommendations adopted by the NRL and according to the level of the site. Each site should have on hand a site-appropriate guide on laboratory safety precautions. Observe all precautions to protect against blood contamination, including medical waste disposal procedures, infection control and universal precautions.

# CHAPTER 3

## PREVENTION OF MOTHER TO CHILD TRANSMISSION INTERVENTIONS

### 3.1 Integration of PMTCT in maternal and child health services

PMTCT should be integrated in ANC, labour and delivery, postnatal care and child health care services in order to give most women and children the opportunities to receive PMTCT services. These services form critical entry points to HIV prevention, care, support and treatment in MCH settings

#### ***Comprehensive Antenatal Care:***

This entails providing a service to a client at all visits - minimum four antenatal visits. Women with special needs should be given appointments and be seen individually. HIV positive pregnant women and mothers should be treated the same way as negative women, given care as needed and referred for treatment (See adult HIV/AIDS Treatment Guidelines) when the CD4 cell count is <350. Annex 1 indicates services that should be provided to all women attending ANC clinics.

#### ***Nutritional support for HIV positive women:***

HIV-infected women require micronutrient supplementation during pregnancy to maintain their immune system. The following micronutrients have an effect on the immune system: iodine, zinc, calcium, magnesium, iron, vitamin A, folic acid, vitamin B 6 & 12, vitamin D, and Selenium (found in dark leafy vegetables, yellow and orange fruits, sweet potatoes, tomatoes, avocado). Give multivitamin tablets to every HIV positive pregnant women.

#### ***Prophylaxis for HIV positive pregnant women:***

Indications for Cotrimoxazole and Isonizide (INH) Prophylaxis for HIV positive pregnant women include:

- Cotrimoxazole prophylaxis should be given to all symptomatic HIV infected women (Stages II, III or IV) or CD4 cell count < 350.
- INH prophylaxis should be given to HIV positive women without active TB and according to National TB Guidelines

### 3.2 Follow up for HIV positive pregnant women

CD4 count for all pregnant women who have tested positive is needed as a baseline.

- HIV-infected women with CD4 count of >350 and asymptomatic need to be followed up routinely at ANC visits and/or as per appointments to monitor disease progression every 6 months.
- Pregnant women with CD4 <350 or WHO Stages III or IV should be started on ART and followed up as recommended in ART guidelines.
- Pregnant women who are not eligible for ART need short course ARV prophylaxis to prevent MTCT (See Chapter 4)
- Prevention and treatment of opportunistic infections are important for care at all stages of HIV/AIDS.

### 3.3 Intrapartum care

HIV infected women should not be isolated or treated differently from other women and should receive quality intrapartum care. Health care workers should uphold universal precautions at all times to prevent HIV transmission.

Intrapartum package includes:

- History taking, including laboratory tests and drugs being used or to be used during pregnancy/labour
- Avoidance of invasive procedures
- Monitoring of foetal and maternal condition and progress of labour (use of partogram)
- Provision of ARV prophylaxis for HIV positive mothers not on HAART
- Infection prevention measures

#### **Specific intrapartum interventions:**

- Confirm the HIV status of all women who are admitted to labour ward
- Relieve pain and relax the woman so that labour can progress faster
- Manage labour actively according to obstetric guidelines
- Use a partogram in monitoring progress of labour in order to improve the management and reduce the risk of prolonged labour
- Avoid artificial rupture of membranes (ARM); 4 hours prior to delivery as this increases the risk of HIV transmission
- Do not perform episiotomy as a routine, except for specific obstetric indications
- Avoid frequent/unnecessary vaginal examinations
- Give emotional support during labour for all women
- Continue ARV therapy if mother is on ART or prophylaxis (see Chapter 4)

*NB: If Caesarean section (C/S) is indicated, elective C/S is recommended because it has been found to reduce the risk of MTCT compared to emergency C/S or vaginal delivery.*

### 3.4 Management of women with unknown HIV status during labour and delivery

Identification of HIV-infected women in labour or shortly after delivery provides an important opportunity for the women to benefit from PMTCT services and to access HIV related treatment and care. Health care workers should offer HIV testing to women of unknown HIV status in first stage of labour. If not possible, testing can be offered after delivery. After testing, ARV prophylaxis and further management should be provided accordingly (see Chapter 4).

### 3.5 Care of the mother after delivery

The postpartum period provides an opportunity to educate all mothers about HIV. Counselling and HIV testing should be offered to women with unknown HIV status, including women who delivered at home.

#### **Care of the perineum:**

- Encourage proper hygiene by use of saline sitz baths
- Treat pre-existing vulva abscess or warts aggressively.
- Advise against unprotected early penetrative sex after delivery.

#### **Care of the breast:**

- Emptying both breasts will ensure breasts are not engorged.
- Proper attachment and positioning of baby during breastfeeding to prevent nipple cracks.
- Prompt treatment of breast conditions.
- For those not breastfeeding, inhibit lactation e.g. with pyridoxine 200mg daily for ten days or by wearing a firm bra and reducing fluid intake

See Chapter 5 for care and follow-up of the baby.

***Follow-up of HIV Positive Women:***

Encourage women to return to the facility for continued care and support within 14 days, at six weeks and other subsequent visits. Ensure that the mother and the baby are seen together. Follow-up care should include the following services:

- Continuing routine health care including pap smears and monitoring for vaginal infections.
- Monitoring and treatment of opportunistic infections, STIs, Malaria and TB
- Referral for Antiretroviral Therapy when indicated
- Monitoring for signs and symptoms of postnatal infections and offer treatment where indicated.

***Family planning:***

Contraception and child spacing should be discussed with every woman at each antenatal, postpartum and follow-up visit.

Family planning is important to all women and the role of condom use (dual protection) should be emphasized in order to:

- Prevent unintended pregnancy
- Reduce the risk of HIV/STI transmission
- Reduce the risk of HIV/STI infection
- Child spacing

***Dual method:***

- Use of two methods to protect infections and pregnancy (condom and any other contraceptive).
- Injectable and oral contraceptives are the most effective methods to prevent pregnancy (injectable medroxyprogesterone acetate depot injection is the hormonal method of choice in patients on ART).
- It is recommended that women on injectable progesterone should be monitored by ALT monthly due to increased chances of hepatitis.

## CHAPTER 4

# ANTIRETROVIRAL DRUGS IN PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV

### 4.1 ARV prophylaxis for PMTCT (Table 11)

Single dose Nevirapine (SD-NVP) is the regimen that has been used for PMTCT since 2003. Given the availability of ARV in the country, HIV infected pregnant women can now be offered combined ARV prophylaxis including highly active antiretroviral therapy (HAART) for pregnant women who need it for their own health.

The recommended regimen is AZT/SD-NVP. If there is enough capacity, then 3TC should be added to this regimen.

SD-NVP is the minimum prophylaxis regimen that must be provided to every HIV positive pregnant woman.

**Pregnant mothers with a CD4 < 350 or in WHO Stages III or IV should receive HAART both to improve their own health and to prevent MTCT.**

#### ***Benefits of HAART:***

- Prevents Mother-To-Child Transmission.
- Reduces maternal morbidity and mortality.
- Improves the quality of life

### 4.2 Women eligible for HAART

Pregnant women in WHO Stages III and IV or CD4 cell count < 350 should start HAART during pregnancy as soon as feasible (Annex 2)

**Table 5: Recommended first line ARV treatment regimen for pregnant women and prophylaxis for Infants**

<b>Mother</b>	
Antepartum	AZT + 3TC + NVP twice daily
Intrapartum	AZT + 3TC + NVP twice daily
Postpartum	AZT + 3TC + NVP twice daily
<b>Infant</b>	AZT twice daily for 7 days or 4 weeks

- If the woman received HAART during pregnancy for at least four weeks, give the infant AZT for seven days.
- If the woman received HAART during pregnancy for less than four weeks, give the infant AZT for four weeks. In this case the infant dose of AZT must be adjusted according to weight.

D4T or ABC are alternatives where either AZT or 3TC is contra-indicated. EFZ can be used as an alternative for NVP in women who are in the second or third trimester.

Mothers with CD4 cell count between 250 and 350 on a NVP containing regimen have a higher chance of hepatotoxicity and require close monitoring of ALT/AST in the first 12 weeks of therapy (baseline, and 2, 4, 8 and 12 weeks). HAART containing EFZ may be used during first trimester for women in need of HAART if potential benefits (eg. Treatment for woman's own health) justify the potential risk to the infant.

The following combinations should be avoided:

- d4T and ddl
- d4T and AZT

### 4.3 ARV prophylaxis for pregnant women not eligible for HAART

#### **Recommended prophylaxis regimen: AZT/SD-NVP:**

The recommended PMTCT regimen for pregnant women not eligible for HAART is AZT/SD-NVP.

Give AZT from 28 weeks of gestation if:

- Anaemia has been excluded (haemoglobin level  $\geq$  7 gram/decilitre)
- Client is willing to adhere to the drug regimen.

**Table 6: AZT/SD-NVP prophylaxis regimen to prevent MTCT**

<b>Mother</b>	
Antepartum	AZT twice daily
Intrapartum	AZT + SD-NVP
<b>Infant</b>	SD-NVP + AZT twice daily for 7 days or 4 weeks

- If the woman has received AZT for at least four weeks before delivery, give the infant AZT for one week.
- If the woman has received AZT for less than four weeks, give the infant AZT for four weeks. In this case the infant dose of AZT must be adjusted according to the weight of the infants.

#### **Minimum intervention: SD-NVP regimen:**

Each HIV positive pregnant women who delivers in Swaziland should at least receive SD-NVP to prevent mother-to-child-transmission. This regimen is only applicable for women who are not able to follow the AZT/SD-NVP regimen

- Give single dose NVP 200mg tablet to HIV infected pregnant women at the time of diagnosis to take home.
- Tell HIV infected pregnant woman to swallow the NVP tablet at the onset of true labour.
- Give the infant a single dose of NVP 0.6ml oral suspension within 72 hours of delivery
- Ask the mothers who deliver at home to bring the infant to the health facility to be given single dose of NVP 0.6ml oral suspension within 72 hours of delivery.

**Table 7: Minimum intervention: SD-NVP regimen**

<b>Mother</b>	
Intrapartum	SD-NVP
<b>Infant</b>	SD-NVP

- NVP swallowed during false labour or when labour is imminent (delivery occurs in less than 2 hours of swallowing NVP) will not provide the required intrapartum prophylaxis. The woman should be considered as having missed the intrapartum dose. Do not give a second dose of NVP. In such situations give the infant single dose of NVP suspension together with AZT suspension 4mg/kg twice daily for 4 weeks. If AZT suspension is not available, give only single dose NVP suspension to the infant. Do not repeat the NVP dose due to the increased risk of NVP resistance.

#### 4.4 Optional regimen: AZT + SD-NVP + AZT/3TC

Facilities that have sufficient capacity can extend the recommended regimen (AZT + SD-NVP) to include intrapartum 3TC and a 7 day AZT/3TC tail to prevent possible development of NVP resistance.

**Table8: Recommended ARV prophylaxis regimen to prevent MTCT in facilities with sufficient capacity**

<b>Mother</b>	
Antepartum	AZT twice daily
Intrapartum	AZT + SD-NVP + 3TC 12 hourly
Postpartum	AZT/3TC twice daily for 7 days
<b>Infant</b>	SD-NVP + AZT twice daily for 7 days or 4 weeks

- If the woman has received AZT for at least four weeks before delivery, give the infant AZT for one week.
- If the woman has received AZT for less than four weeks, give the infant AZT for four weeks. In this case the infant dose of AZT must be adjusted according to the weight of the infants.

#### 4.5 ARV prophylaxis for women identified during labour

Women who present during early labour and who do not know their HIV status should be counselled and tested as soon as possible.

HIV positive women in labour who have not taken any ARV during pregnancy should receive SD-NVP or SD-NVP plus AZT 600mg at least 2 hours before delivery.

**Table 9: Recommended ARV regimen to prevent MTCT for HIV positive mothers identified during labour.**

<b>Mother</b>	Recommended	Minimum
Intrapartum	AZT + SD-NVP	SD-NVP
<b>Infant</b>	SD- NVP + AZT twice daily for 4 weeks	SD-NVP

Give the infant single dose NVP within 72 hours of birth and AZT doses twice daily for four weeks. If AZT is not available, give the infant only a single dose of NVP suspension.

#### 4.6 ARV prophylaxis for infants whose mothers did not receive ARV prophylaxis during pregnancy or during labour

For women who are counselled and tested after delivery (at the health facility or home deliveries), give the exposed infants a single dose of NVP suspension immediately after birth and AZT suspension twice daily for four weeks, or if AZT is not available, give the infant only a single dose of NVP suspension.

**Table 10: Recommended ARV regimen for infants whose mothers did not receive ARV prophylaxis during pregnancy or during labour**

	Recommended	Minimum
<b>Infant</b>	SD-NVP + AZT twice daily for 4 weeks	SD-NVP

#### 4.7 Women on HAART who become pregnant

If the pregnancy is recognised only in the 2<sup>nd</sup> or 3<sup>rd</sup> trimester, then the woman should continue with the ART regimen she was taking.

If the pregnancy is recognised in the 1<sup>st</sup> trimester, then EFZ (for woman on an EFZ containing regimen) should be replaced with NVP, NFV or SQV/r because of the possible risk of teratogenic effect of EFV. **If the woman switches from EFZ to NVP, then she should immediately start NVP at 200 mg twice daily.**

Pregnant women on HAART should continued with HAART after delivery. If for any reason HAART needs to be discontinued/suspended, all the ARV drugs must be stopped at the same time and restarted together to decrease the risk of drug resistance. Give the infant AZT for one week.

#### 4.8 Considerations for special cases

##### **HIV infected pregnant women with Active Tuberculosis (special consideration):**

- Screen all HIV infected pregnant women for tuberculosis (TB). Suspect TB if two of the following are present:
  - Loss of weight of  $\geq 1.5$  kg in the previous 4 weeks
  - Cough > 2 weeks
  - Night sweats > 2 weeks
  - Fever > 2 weeks
- Refer to ART/TB guidelines for management of HIV/TB co-infection

##### ***HIV positive Couples intending to have a child:***

If HIV infected couples strongly feel that they want to have a baby, the following services should be offered:

- Counselling on pregnancy and HIV
- Clinical, obstetric and laboratory assessments
- Consideration of use of HAART therapy or prophylaxis for MTCT. Both couples should be on HAART until conception and the woman continues with HAART till delivery, unless there are Indications to continue on HAART for her own health.
- Use of condom is advised during pregnancy

##### ***Discordant couples with positive male partner and negative pregnant woman:***

Family planning and safer sex practices (e.g. the use of condoms) is advised during pregnancy.

Table 11: Antiretroviral prophylaxis regimens and drug dosages to prevent MTCT

Situation	Course	Mother			Infant
		Antenatal	Intrapartum	Postpartum	Postnatal
Women identified and started during pregnancy	<b>Recommended Regimen AZT Plus Single dose NVP</b>	AZT 300 mg twice daily starting at 28 weeks or as soon as possible thereafter.	AZT 600 mg and SD-NVP 200 mg at onset of labour	none	Single dose NVP 6 mg oral suspension immediately after birth Plus AZT 4mg/kg twice a day for 7 days (4 weeks if the mother took AZT for less than 4 weeks). OR Single dose NVP 6 mg oral suspension immediately after birth
	<b>Minimum Regimen Single dose NVP</b>	none	SD-NVP 200 mg at onset of labour	none	Single dose NVP 6 mg oral suspension immediately after birth
	<b>Optional regimen AZT Plus Single dose NVP Plus 7 day AZT/3TC tail</b>	AZT 300 mg twice daily starting at 28 weeks or as soon as possible thereafter.	AZT 600 mg and SD-NVP 200 mg at onset of labour Plus 3TC 150 mg at onset of labour and every 12 hours until delivery	AZT 300 mg twice a day for 7 days Plus 3TC 150 mg twice a day for 7 days	Single dose NVP 6 mg oral suspension immediately after birth Plus AZT 4mg/kg twice a day for 7 days (4 weeks if the mother took AZT for less than 4 weeks). OR Single dose NVP 6 mg oral suspension immediately after birth
Women identified during labour	<b>Recommended Regimen AZT Plus Single dose NVP</b>	none	AZT 600 mg and SD-NVP 200 mg at onset of labour	none	Single dose NVP 6 mg oral suspension immediately after birth Plus AZT 4mg/kg twice a day for 4 weeks OR Single dose NVP 6 mg oral suspension immediately after birth
	<b>Minimum Regimen Single dose NVP</b>	none	SD-NVP 200 mg at onset of labour	none	Single dose NVP 6 mg oral suspension immediately after birth
Women identified after delivery	<b>Recommended Regimen AZT Plus Single dose NVP</b>	none	none	none	Single dose NVP 6 mg oral suspension immediately after birth Plus AZT 4mg/kg twice a day for 4 weeks OR Single dose NVP 6 mg oral suspension immediately after Birth
	<b>Minimum Regimen Single dose NVP</b>	none	none	none	Single dose NVP 6 mg oral suspension immediately after birth

## 4.9 Safety of ARV Drugs for Pregnant Women and Infants

All ARV drugs are associated with some adverse effects/toxicity. The risks of adverse events when short-course prophylactic ARV regimens are used in prevention of MTCT are less than when drug combinations are used for a longer period. Similarly, the potential toxicity to infants exposed to short course ARV drugs is expected to be less than when they are exposed for longer periods. However, the benefit of ARV drugs in pregnancy outweighs potential risk to the mother and the infant.

**Table 12: ARV Drugs Adverse Effects and Toxicity**

ARV drug	Adverse effects/ Toxicit	Contraindication
AZT	Headache, nausea, myalgia, insomnia, decrease with time) anaemia and or neutropenia (incidence decrease with time).	Known allergy, anaemia (Hb < 7g/dl) or severe neutropenia (neutrophils 750) and severe liver or kidney dysfunction.
3TC	Lactic acidosis, hepatomegaly, pancreatitis, peripheral neuropathy, fat redistribution, anaemia, headache, anaphylaxis, nausea and fatigue	Hypersensitivity, impaired renal/hepatic dysfunction
Didanosine (ddl)	Pancreatitis, peripheral neuropathy, hepatotoxicity/renal toxicity, lactic acidosis, blood disorders, diabetes anaphylaxis, teratogenicity	Hypersensitivity impaired renal/hepatic dysfunction. Used with caution in pregnancy, pancreatitis, impaired renohepatic dysfunction, gout
Stavudine (D4T)	Pancreatitis, peripheral neuropathy, hepatotoxicity/renal toxicity, lactic acidosis, blood disorders, diabetes anaphylaxis, lipodystrophy (long term), skin rash, headache	Don't administer with Zidovudine, impaired renohepatic dysfunction, gout.
NVP	Skin rash including Steven Johnson Syndrome, hepatotoxicity, GIT symptoms,	Liver dysfunction – induces cytochrome 250 which in turn decreases nevirapine efficacy.
EFV	Skin rash, CNS disturbance, teratogenicity	First trimester and in children less than three years of age.
Protease Inhibitors	Metabolic disorders, including lipodystrophy, hyperglycaemia, onset or exacerbation of Diabetes mellitus and ketoacidosis	

# CHAPTER 5

## MANAGEMENT OF INFANTS IN THE ERA OF HIV

### 5.1 Care of new born babies

In this era of HIV, it is important to uphold infection prevention and universal precautions in managing infants in labour and postnatal wards to avoid infection. Care for a new born baby should include the following:

- Handle all babies, regardless of HIV status with gloves until maternal blood and secretions are washed off.
- Cut the cord under lightly wrapped gauze and advice mother on cord care to prevent sepsis.
- Immediately after birth, wipe the baby dry with a towel to remove maternal body fluids.
- Do not suction the new born with a nasogastric tube unless there is meconium stained liquor.
- Where suction is required, use a mechanical suction unit (at 100mmHg) or bulb suction if possible rather than mouth operated suction.
- Give Vitamin K
- Give BCG and polio immunization according to schedule.
- Give infants 1% tetracycline eye ointment or 1% silver nitrate eye drop as prophylaxis against ophthalmia neonatorum.
- Skin to skin contact must be established for all infants to prevent hypothermia.
- Advice mothers to commence breastfeeding immediately except for HIV infected women who have chosen not to breastfeed after consideration of AFASS (acceptable, feasible, affordable, sustainable and safe).

### 5.2 Care for HIV exposed infants and children

- Confirm HIV status as early as possible.
- Monitor the child's growth and development.
- Ensure that immunizations are started and completed according to the EPI schedule.
- Provide prophylaxis for opportunistic infections.
- Actively look for and treat infections early.
- Counsel the mother and family on:
  - Optimal infant feeding to minimize MTCT, prevent malnutrition and promote growth and development.
  - Good personal and food hygiene to prevent common infections.
  - Follow up according to the PMTCT/ART integrated framework (Annex 2) and the package of services for each visit (Annex 3)
- Conduct disease staging for the infected child.
- Ensure access and adherence to ARV therapy for the infected child.
- Provide psychosocial support to the infected child and mother.
- Where possible refer the infected child to higher levels of specialized care including initiation of ARV if necessary, or to other social or community-based support programs.

### 5.3 Mother to child transmission and breastfeeding

ARV prophylaxis does not provide long-term protection for the infant who is breastfeeding. The risk of HIV infection remains as long as the baby continues to breastfeed. The proportion of infants infected through breastfeeding is even higher if the mother is infected during the period when she is breastfeeding.

Adherence to safer feeding practices can reduce the likelihood of MTCT through breastfeeding and reduce the risk of infant death from diarrhoea and other childhood infections.

#### **Recommendations for infant-feeding:**

- **For babies born to HIV-negative mothers or mothers with unknown HIV status:**
  - Support mothers to have skin to skin contact with the baby after birth
  - Initiate early breastfeeding in the 1<sup>st</sup> hour after birth
  - Breastfeed exclusively for the first six (6) months of life. In exclusive breastfeeding, the infant is fed on breast milk only, not even water except for prescribed medicines or ORS
  - Continue breastfeeding for up to 2 years or longer.
  - After the infant reaches 6 months of age, introduce complementary foods that provide sufficient nutritional balance.
  - Mothers should also receive information about the risk of becoming infected during breastfeeding. Women with unknown HIV status should be encouraged to be tested for HIV.
  - Mothers should receive information on the dangers of bottle feeding and of introducing infectious diseases e.g. diarrhoea.
  
- **For babies born to HIV positive mothers**

All HIV infected mothers should receive counselling on the **advantages and disadvantages** of infant-feeding options. Support the mother's infant feeding choice and reinforce it at each visit (Figure 6).

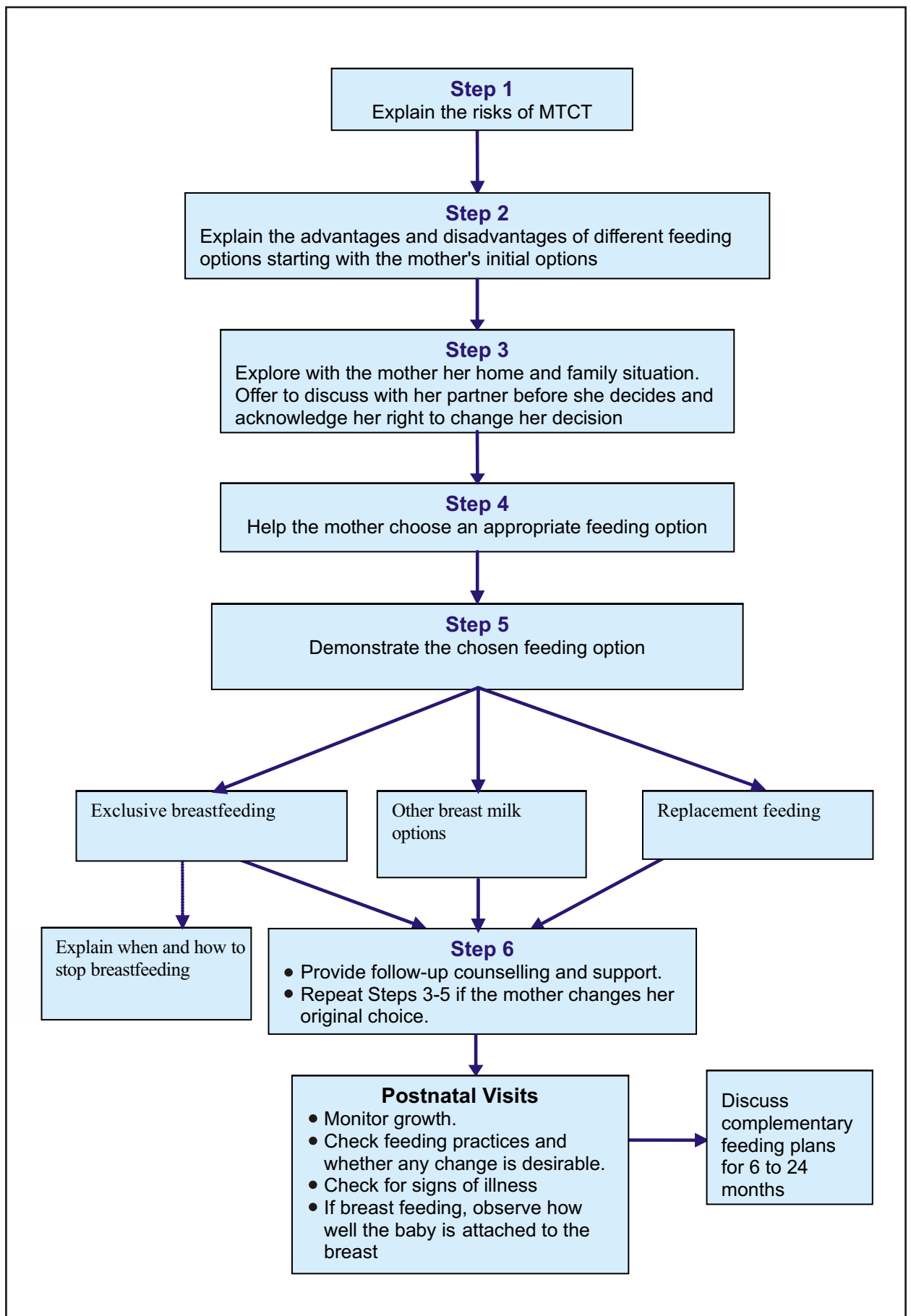
For mothers who choose to breastfeed exclusively, health workers should:

- Advise mothers on weaning process when the baby is 6 months old and introduce him/her to nutritious foods available at home
- Advise mothers who develop problems on both breast as follows:
  - to stop breastfeeding and use replacement feeds until the breasts heal
  - continue exclusive replacement feeding if it is AFASS after the breasts have healed
  - If the breasts have healed and continuing with replacement feeding is not AFASS, the mother should resume exclusive breastfeeding

For mothers who choose to provide replacement feeding, health workers should:

- Discuss the issues of Affordability, Feasibility, Acceptability, Sustainability and Safety (AFASS)
- Where AFASS for replacement feeding is applicable, HIV infected women should not breastfeed at all.

**Fig 4: Steps for counselling mothers infected with HIV about infant feeding**



## 5.4 Replacement feeding during the first 6 months of life

Replacement feeding is feeding infants who are receiving no breast milk with a diet that provides the nutrients the infant needs until the age at which he/she can feed on family foods. Unlike breastfeeding, replacement feeding does not provide immune protection against diseases.

During the first 6 months of life, replacement feeding should be with a suitable breast milk substitute. After six months, the suitable breast milk substitute should be complemented with other foods.

**If a woman is considering replacement feeding for the first six months there are two types of breast milk substitutes:**

- Commercial infant formula
- Home-modified formula with micronutrient supplements

### ***How to achieve exclusive replacement feeding:***

The mother who takes this option needs social support and should be advised:

- On basic hygiene measures
- On proper storage of prepared feed; a thermos flask should not be used because it will help bacteria to multiply.
- To store infant formula in a cool and dry place.
- To always check the expiry date to ensure that the milk is not expired.
- To follow the manufacturer's instructions on the infant formula label in order to ensure safe preparation of formula.
- To disclose to close family members in order to support her in her decision to use replacement feedings.

## 5.5 Clinical Management of HIV Exposed Infants and Children

HIV infected children may have frequent infections and need continuous care. Health workers are encouraged to use Paediatric AIDS and Integrated Management of Childhood Illness (IMCI guidelines) to detect clinical signs of HIV infection.

Health workers should inform HIV-infected mothers at delivery that their infants need cotrimoxazole (CTX) prophylaxis starting at 6 weeks of age until HIV infection is excluded.

### ***Indications for cotrimoxazole prophylaxis:***

- All **HIV exposed** infants (infants whose mothers are known to be HIV positive)
  - From 6 weeks of age
  - Until HIV infection has been definitely ruled out
- All **HIV infected children < 6 years**
  - From time of HIV diagnosis
- All **HIV infected children > 6 years**
  - From time of HIV diagnosis
  - Indefinitely if there is no ART available for the child
  - Until the child has evidence of immune restoration under ART (See Chapter on ART in Paediatric AIDS Guidelines)
- All children with clinical signs or symptoms suggestive of HIV, regardless of age.
  - From time of HIV suspicion/diagnosis

For symptoms of paediatric HIV infection and clinical staging, refer to guidelines for Paediatric AIDS and Annex 5&6.

**Table 13: Cotrimoxazole prophylaxis dosages**

Weight (kg)	Age	Oral suspension 200/40 per 5 ml	Pediatric tablet 100/20	Single strength tablet 400/80
≤5kg	< 6 months	2.5 ml	1	1/4
5-15kg	6 months – 5 years	5 ml	2	1/2
15-30	5 – 15 years	10 ml	-	1
≥ 30kg	>15 years	-	-	2

*\*Split tablets into quarters only if syrups are not available*

## 5.6 Regular Follow-up Care

The minimum recommended number of follow-up visits to a health facility is as follows:

- At birth or within 72 hours (for infants delivered at home, ascertain HIV exposure status and provide the required interventions, including immunizations)
- Within two weeks after delivery for continued care for both mother and baby (mainly for infant feeding counselling and adherence to any drugs)
- At age 6, 10, and 14 weeks (for immunization, infant feeding counselling, and adherence to any drugs)
- After age 14 weeks, monthly through age 12 months (for immunization, infant feeding and adherence counselling to any drugs)
- After age 12 months, every 3 months through 24 months (for immunization, infant feeding counselling and adherence to any drugs). At 18 months a confirmatory antibody based test should be done (if there are no resources for an earlier antigen-based test)
- After 2 years, a minimum of yearly visits for asymptomatic HIV infection otherwise 3 monthly visits for drug adherence and monitoring.

HIV-infected children less than 12 months old are at increased risk for morbidity and mortality and are at higher risk for “rapid progression”, i.e. the HIV disease causes a more rapid deterioration in their immune system than other age groups. Therefore, health care workers should emphasize the importance and benefits of follow-up visits for the HIV exposed child. Also, extra care is needed in clinical and laboratory monitoring as well as treatment. In addition to the use of WHO Staging, CD4 cell count should be monitored carefully according to recommendations in paediatric care guidelines.

## 5.7 Referrals/Linkages to specialised care and support

Referrals are an important part of managing HIV-exposed infants or infected children. This includes referrals to:

- Specialized care for further investigations and treatment. ARV Therapy should be provided according to the paediatric AIDS care guidelines.
- Social support programmes
- Community-based care programmes

### **Community mobilization and linkages:**

Community mobilisation is the process of sensitising and supporting communities to collectively address community problems. Community members if educated and sensitised on the need for comprehensive PMTCT related services, can begin to take responsibility of initiating and sustaining activities to support service integration.

The starting point in mobilising a community is to ensure that community members engage in the development initiative to:

- Assess community capacity to address the issues surrounding integration of PMTCT services.
- Establish a plan of action that will meet specific community needs.
- Enlist the support of community organisations.
- Establish a mechanism for monitoring their plan of action and outcomes.

Healthcare workers can facilitate a connection with community-based initiatives by networking with supportive community agencies, identifying key partners and preferred methods of contact and communication:

- Social issues, including cultural practices within a community, may facilitate or hinder participation of women, men and other population groups in PMTCT.
- Issues of stigma and discrimination have their origin in society and are enhanced at the community level through a system of norms, values, beliefs, myths and sanctions.
- Communities may associate HIV/AIDS with immorality and stigmatize those who become infected at the community. It is important to address this through community mobilisation so that people living with HIV can freely access services without feeling threatened.

# CHAPTER 6

## ESTIMATING SUPPLY REQUIREMENTS, MONITORING AND EVALUATION OF PMTCT PROGRAMME

### 6.1 Estimating supply requirements

Implementation of PMTCT services rely on existing staff and infrastructure of the facility. Therefore the supplies for PMTCT services should be part of the logistics required to delivery health care (preventive, curative etc.) services at health facilities and should be integrated within the existing supply and management system in the country.

Routine service delivery data from the implementing facilities will be used for quantification of the commodities required for PMTCT. Program managers and supervisors at national level could use some of the following information for forecasting and quantifying the consumables for PMTCT:

- Total number of deliveries per year, currently estimated at 40,000
- 93% of pregnant women attend ANC at least once, assume all the pregnant women will attend ANC when estimating for supplies
- Current PMTCT reports indicate that approximately 80% of all pregnant women will accept HIV test
- 42.6 % of all women testing for HIV will test positive for HIV antibodies
- All HIV infected pregnant women will require Nevirapine tablets for PMTCT
- Assume 30% of the HIV infected pregnant women will require HAART
- Assume 50% of the HIV infected pregnant women will require AZT short course regimen
- All HIV exposed children will require Nevirapine and Zidovudine suspension
- All HIV exposed infants will require cotrimoxazole prophylaxis

**Table 14: Example of yearly national estimates for PMTCT**

Total number of pregnant women per year =40000	Commodity required	
HIV test acceptance: 80% x 40000 =32000 tests using determine	Determine testing kits	32000
42.6 % of 32000 tests using Unigold = 13632 positive women	Unigold testing kits	13632
Number requiring NVP = all HIV infected women	NVP 200mg tablets	13632
Number to be provided AZT short course regimen:50% x 13632 = 6816	AZT 300mg tablets	6816
Number requiring HAART: 30% x 13632 = 4090	HAART	4090
All HIV exposed infants require short course NVP and AZT drugs = 13632	NVP and AZT suspensions	13632
All women on HAART require cotrimoxazole prophylaxis (CTX) = 4090	Cotrimoxazole tablets	4090
All HIV exposed infants require cotrimoxazole prophylaxis (CTX) = 13632	Cotrimoxazole syrup/suspension	13632

Using the example in Table 14 above, and by substituting the relevant figures to reflect regional figures e.g. number of pregnant women in a certain region, regional managers should make their

Own projection for all the commodities required for PMTCT. Similarly, the facilities can use their own data: number of pregnant women attended to in the past one year, number who accepted HIV testing etc. to quantify the commodities required in the facility to provide PMTCT service.

## 6.2 Storage and distribution of PMTCT commodities

All drug related supplies i.e. ARVs and cotrimoxazole will be ordered and stored by the Central Medical Stores (CMS). Facilities will estimate and submit annual requirements to regional and national programme focal points who in turn will submit them to CMS. The CMS will distribute the supplies directly to the facilities upon submission of a request.

All laboratory related PMTCT supplies i.e. rapid testing kits (Determine and Unigold) will be ordered and stored by the National Reference Laboratory (NRL). Facilities will estimate and submit quantities annually to regional and national focal points who in turn will submit them to NRL. The laboratory will distribute the supplies directly to the facilities upon submission of a request.

## 6.3 Monitoring and evaluation

### Definitions:

**Monitoring** is a regular/routine, systematic collection and analysis of information to track the progress of program implementation **with the specific aim of improving service delivery**. Consistent monitoring results in timely, accurate and complete information that can be analyzed to generate a report on utilization of services by the target population. The report of routine program monitoring is useful **for service providers at the facility and program managers at regional and national levels for planning and resource allocation**.

**Evaluation** is the systematic examination and/or analysis of past decisions in order to assess value, worth or impact, and to learn from them and improve. Evaluation takes an objective look at the activities performed and identifies the reasons for both success and failure, and how future work can learn from both. It is normally not routine, but carried out at specified periods.

Monitoring and evaluation (M&E) help programme implementers to:

- Determine the extent to which the programme is on track and to make any needed corrections accordingly
- Make informed decisions regarding operational management and service delivery
- Determine and ensure the most effective use of resources
- Evaluate the extent to which the program/project is having or has had the desired impact

## 6.4 Record keeping

The indicators selected for monitoring PMTCT are integrated into various registers in the maternal and child health (MCH) settings for all clients who receive the services in that health facility. PMTCT indicators have been integrated in the following registers:

1. Antenatal register
2. Maternity register
3. Post-natal care register
4. Child Welfare registers (Immunization register)
5. Laboratory register
6. ART register

## 6.5 Structure for the flow of report from the facilities (see diagram-Annex 8)

Health workers in facilities implementing PMTCT services will enter information into the registers. Data collected will be aggregated into monthly reports (Annex 7), which come in triplicate (3 copies for facility, regional and national levels). Monthly reports (report from the 1st day to the last day of

the month) should be sent to the regional level and then sent to the national level on time to allow feedback and relevant action. Monthly reports aim at assisting implementers in programming, planning, decision making and ensuring adequate logistics and supplies.

## ANNEX 1

### SERVICES PROVIDED TO ANC CLIENTS AT FIRST AND SUBSEQUENT VISITS

First visit-all women (1 – 16 weeks)	Subsequent visits all women (2 <sup>nd</sup> visit: 24 to 28 weeks; 3 <sup>rd</sup> visit: 32 and 36 weeks; 4 <sup>th</sup> visit: 36 and above)	Subsequent visits (HIV positive pregnant women and mothers) 2 <sup>nd</sup> visit: 24 to 28 weeks; 3 <sup>rd</sup> visit: 32 and 36 weeks; 4 <sup>th</sup> visit: 36 and above
General health education	General health education	General health education and continuous counselling
History taking	Check every ANC Card for HIV information and educate the client on PMTCT and offer the services	<ul style="list-style-type: none"> <li>▪ Find out how the woman is feeling, how she is coping with CTX or ARV drugs if on treatment,</li> <li>▪ Encourage the client to bring family members to test for HIV</li> </ul>
Investigations – Hb, syphilis and HIV	<ul style="list-style-type: none"> <li>▪ Repeat investigations if necessary</li> </ul>	<ul style="list-style-type: none"> <li>▪ CD4 cell count,</li> <li>▪ FBC if eligible for ART</li> <li>▪ Chemistry (LFT, RFT) if eligible for ART</li> <li>▪ Sputum for AFB if TB is suspected</li> </ul>
Physical examination (look for signs and symptoms of HIV/STI/HIV)	<ul style="list-style-type: none"> <li>▪ Physical examination</li> <li>▪ Find out how the client is feeling before physical examination and attend to complaints if any</li> </ul>	<ul style="list-style-type: none"> <li>▪ Physical examination, use WHO Staging (Annex 2) to stage every woman and provide care and/or refer to a doctor as necessary</li> <li>▪ Find out how the client is feeling before physical examination and attend to complaints if any</li> </ul>
Give health education on maternal nutrition and identify women who need individual counselling	<ul style="list-style-type: none"> <li>▪ Emphasize the importance of good nutrition in pregnancy to promote good pregnancy outcome</li> <li>▪ Give individual nutrition information to women who need special attention</li> </ul>	<ul style="list-style-type: none"> <li>▪ Emphasize the importance of good nutrition in pregnancy to promote good pregnancy outcome and treatment as necessary</li> <li>▪ Give individual nutrition information to women who need special attention</li> <li>▪ Ensure women receive food supplements</li> </ul>
		<ul style="list-style-type: none"> <li>▪ Avoid invasive procedures e.g. chorionic villus sampling; amniocentesis and external cephalic version to reduce the risk of MTCT</li> </ul>
<ul style="list-style-type: none"> <li>▪ Encourage women to request partners to test for HIV – it is possible that some partners of HIV negative women could be positive</li> <li>▪ Counsel couples together</li> </ul>	<ul style="list-style-type: none"> <li>▪ Encourage partners to test for HIV– it is possible that some partners of HIV negative women could be positive</li> <li>▪ Counsel couples together</li> </ul>	<ul style="list-style-type: none"> <li>▪ Encourage women to access care, support and treatment and to request partners to test for HIV – it is possible that some partners of HIV positive mothers are HIV negative</li> <li>▪ Counsel couples together</li> </ul>
<ul style="list-style-type: none"> <li>▪ Family planning, including dual protection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Family planning, including dual protection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Family planning, including dual protection</li> </ul>

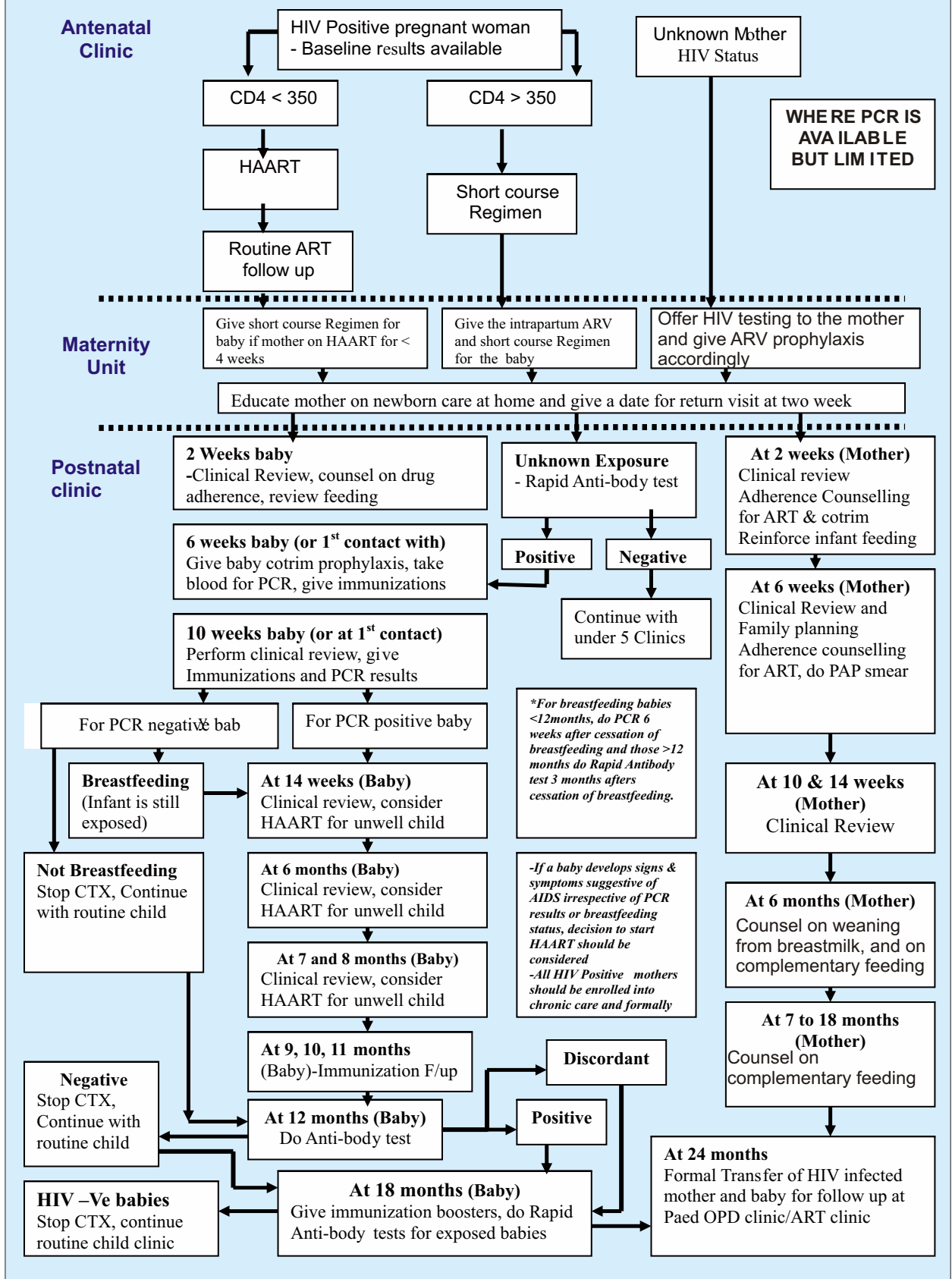
## ANNEX 2

### WHO CLINICAL STAGING FOR ADULTS AND ADOLESCENTS

For 13 years olds or more with positive HIV antibody test or other laboratory evidence of HIV infection.

<p><b>PRIMARY HIV INFECTION</b></p> <ul style="list-style-type: none"> <li>• Unrecognized</li> <li>• Acute retroviral syndrome</li> </ul>
<p><b>CLINICAL STAGE 1</b></p> <ul style="list-style-type: none"> <li>• Asymptomatic</li> <li>• Persistent generalized lymphadenopathy (PGL)</li> </ul>
<p><b>CLINICAL STAGE 2</b></p> <ul style="list-style-type: none"> <li>• Moderate unexplained weight loss (&lt;10% of presumed or measured body weight)</li> <li>• Recurrent upper respiratory tract infections (sinusitis, bronchitis, otitis media, pharyngitis)</li> <li>• Herpes zoster (past or current episodes in last 2 years)</li> <li>• Angular cheilitis</li> <li>• Recurrent oral ulcerations (2 or more episodes in 6 months)</li> <li>• Papular pruritic eruptions</li> <li>• Seborrhoeic dermatitis</li> <li>• Fungal nail infections of fingers</li> </ul>
<p><b>CLINICAL STAGE 3</b></p> <ul style="list-style-type: none"> <li>• Severe weight loss (&gt;10%presumed or measured body weight)</li> <li>• Unexplained chronic diarrhoea for longer than one month</li> <li>• Unexplained persistent fever (intermittent or constant, for longer than 1month)</li> <li>• Oral candidiasis</li> <li>• Oral hairy leukoplakia</li> <li>• Pulmonary tuberculosis<sup>1</sup>(diagnosed in last two years)</li> <li>• Severe presumed 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;8gm/dl), neutropenia (&lt;1,000/mm<sup>3</sup>) or thrombocytopenia (&lt;30,000/ mm<sup>3</sup>) for more than 1 month</li> </ul>
<p><b>CLINICAL STAGE 4</b></p> <ul style="list-style-type: none"> <li>• HIV wasting syndrome</li> <li>• Pneumocystis pneumonia</li> <li>• Recurrent severe or radiological bacterial pneumonia (2 or more episodes within one year)</li> <li>• Chronic orolabial, genital, or anorectal Herpes simplex infection (of more 1 month duration )</li> <li>• Candidiasis of the oesophagus</li> <li>• Extrapulmonary tuberculosis</li> <li>• Kaposi's sarcoma</li> <li>• CNS toxoplasmosis</li> <li>• HIV encephalopathy</li> <li>• Cryptococcal meningitis</li> <li>• Disseminated non-tuberculosis mycobacteria infection</li> <li>• Progressive multifocal leukoencephalopathy (PML)</li> <li>• Candida of trachea, bronchi, or lungs</li> <li>• Extrapulmonary Cryptococcus</li> <li>• Cryptosporidiosis (diarrhoea more 1 month)</li> <li>• Isosporiasis</li> <li>• Cytomegalovirus infection (retinitis or of an organ other than liver, spleen, or lymph nodes)</li> <li>• Any disseminated mycosis (e.g. Histoplasmosis, Coccidiomycosis, Penicilliosis)</li> <li>• Recurrent non-typhoid salmonella septicaemia (2 or &gt;episodes in one year)</li> <li>• Lymphoma (Cerebral or B cell non-Hodgkin's)</li> <li>• Invasive cervical carcinoma</li> <li>• Leishmaniasis, visceral</li> </ul>

## ANNEX 3 PMTCT and ART Integration Framework



## ANNEX 4

### PACKAGE OF SERVICES FOR WOMEN AND CHILDREN DURING FOLLOW-UP VISITS

During follow up visits, provide the following services	
2 weeks	
Women	Children
<ul style="list-style-type: none"> <li>Perform physical examination: Pallor, Pulse, temperature, BP, Breast (nipple cracks/fissure, abscess, engorgement), uterus involution, lochia, anaemia, exclude puerperal sepsis</li> <li>Give cotrimoxazole prophylaxis if indicated</li> <li>Give vitamin A 200,000IU if not given at delivery</li> <li>Family planning counselling</li> <li>Counsel and support infant feeding (feed baby every three hours, proper breast attachment)</li> <li>Counsel on new born care (keeping baby warm, danger signs: breathing fast, fever, refusal to feed, septic umbilical stump)</li> <li>Give next appointment date</li> </ul>	<ul style="list-style-type: none"> <li>Perform physical examination: Respiratory rate, Pulse, temperature, signs of dehydration</li> <li>Assess for adverse drug reactions – ARV prophylaxis</li> <li>Counsel on adherence to ARV prophylaxis</li> <li>Confirm or give Immunization: Polio , BCG</li> <li>Weigh the baby and promote growth</li> <li>Observe how the baby is breastfeeding</li> <li>Assess the umbilical cord</li> <li>Treat infection if indicated or refer</li> <li>Give next appointment date</li> </ul>
6 weeks	
Women	Children
<ul style="list-style-type: none"> <li>Perform physical examination: Pallor, Pulse, temperature, BP, Breast</li> <li>Counselling and support infant feeding (feed baby every three hours, proper breast attachment)</li> <li>Counsel on family planning and provide client method of her choice</li> <li>Perform WHO clinical staging</li> <li>Treat opportunistic infection</li> <li>Give co-trimoxazole prophylaxis if indicated</li> <li>Give vitamin A 200,000IU if not given in previous visit</li> <li>Take blood for laboratory test: CD4, FBC, Hb, RFT, LFT</li> <li>Counsel the mother on nutrition</li> <li>Give appointment for her next visit</li> </ul>	<ul style="list-style-type: none"> <li>Give Polio, Combined DPT/HB</li> <li>Weight and growth promotion</li> <li>Perform physical examination: Respiratory rate, Pulse, temperature, signs of dehydration</li> <li>Perform WHO clinical staging</li> <li>Give cotrimoxazole prophylaxis</li> <li>Treat opportunistic infection</li> <li>Take blood for PCR tests, CD4 cell count percent</li> <li>Give next appointment date</li> </ul>
10 weeks	
Women	Children
<ul style="list-style-type: none"> <li>Perform physical examination: Pallor, Pulse, temperature, BP, Breast</li> <li>Treat opportunistic infection</li> <li>Give co-trimoxazole prophylaxis if indicated</li> <li>Counselling and support infant feeding (feed baby every three hours, proper breast attachment)</li> <li>Support the mother on her family</li> </ul>	<ul style="list-style-type: none"> <li>Give Polio, Combined DPT/HB</li> <li>Weigh and promote growth</li> <li>Perform physical examination: Respiratory rate, Pulse, temperature, signs of dehydration</li> <li>Perform WHO clinical staging</li> <li>Give cotrimoxazole prophylaxis</li> <li>Treat opportunistic infection</li> <li>Give next appointment date</li> </ul>

## ANNEX 4 cont.

14 weeks	
Women	Children
<ul style="list-style-type: none"> <li>• Perform physical examination: Pallor, Pulse, temperature, BP, Breast</li> <li>• Help mother to prepare for transition from exclusive breastfeeding:               <ul style="list-style-type: none"> <li>○ Advice mother to discuss weaning with her family</li> <li>○ Express milk to practice cup feeding</li> <li>○ Find regular supply of formula or other milk</li> <li>○ Learn how to safely prepare and store infant feed at home</li> </ul> </li> <li>• Counsel on family planning and provide client method of her choice</li> <li>• Perform WHO clinical staging</li> <li>• Treat opportunistic infection</li> <li>• Give co-trimoxazole prophylaxis if indicated</li> <li>• Take blood for laboratory test: CD4, FBC, Hb, RFT, LFT</li> <li>• Counsel the mother on nutrition</li> <li>• Book an appointment for review by ART doctor</li> </ul>	<ul style="list-style-type: none"> <li>• Give Polio, Combined DPT/HB</li> <li>• Weigh and promote growth</li> <li>• Perform physical examination: Respiratory rate, Pulse, temperature, signs of dehydration</li> <li>• Perform WHO clinical staging</li> <li>• Give cotrimoxazole prophylaxis</li> <li>• Treat opportunistic infection</li> <li>• Take blood for PCR tests, CD4 cell count percent</li> <li>• Book the patient appointment for review by ART doctor</li> </ul>
6 months	
Women	Children
<ul style="list-style-type: none"> <li>• Perform physical examination: Pallor, Pulse, temperature, BP, Breast</li> <li>• Help mother to prepare for transition from exclusive breastfeeding:               <ul style="list-style-type: none"> <li>○ Teach mother to cup feed her baby</li> <li>○ Let mother start giving formula or cow's milk and stop breast feeding completely</li> <li>○ Tell mother to express and discard some breast milk to prevent engorgement until lactation stops</li> </ul> </li> <li>• Counsel on family planning and provide client method of her choice</li> <li>• Perform WHO clinical staging</li> <li>• Treat opportunistic infection</li> <li>• Give co-trimoxazole prophylaxis if indicated</li> <li>• Take blood for laboratory test: CD4, FBC, Hb, RFT, LFT</li> <li>• Counsel the mother on nutrition</li> <li>• Book the patient appointment for review by ART doctor</li> </ul>	<ul style="list-style-type: none"> <li>• Give Polio, Combined DPT/HB</li> <li>• Weigh and promote growth</li> <li>• Perform physical examination: Respiratory rate, Pulse, temperature, signs of dehydration</li> <li>• Perform WHO clinical staging</li> <li>• Give cotrimoxazole prophylaxis</li> <li>• Treat opportunistic infection</li> <li>• Give vitamin A 100,000 IU</li> <li>• Give next appointment date</li> </ul>

## ANNEX 4 cont.

9 months	
Women	Children
<ul style="list-style-type: none"> <li>• Perform physical examination: Pallor, Pulse, temperature, BP, Breast</li> <li>• Counsel on family planning and provide client method of her choice</li> <li>• Perform WHO clinical staging</li> <li>• Treat opportunistic infection</li> <li>• Give co-trimoxazole prophylaxis if indicated</li> <li>• Take blood for laboratory test: CD4, FBC, Hb, RFT, LFT</li> <li>• Counsel the mother on nutrition for herself and the baby</li> <li>• Give appointment for her next visit</li> </ul>	<ul style="list-style-type: none"> <li>• Perform physical examination: Respiratory rate, Pulse, temperature, signs of dehydration</li> <li>• Give Polio, Combined DPT/HB, measles vaccines</li> <li>• Weigh and promote growth</li> <li>• Perform WHO clinical staging</li> <li>• Give cotrimoxazole prophylaxis</li> <li>• Treat opportunistic infection</li> <li>• Give next appointment date</li> </ul>
12 months	
Women	Children
<ul style="list-style-type: none"> <li>• Perform physical examination: Pallor, Pulse, temperature, BP,</li> <li>• Counsel on family planning and provide client method of her choice</li> <li>• Treat opportunistic infection</li> <li>• Give co-trimoxazole prophylaxis if indicated</li> <li>• Counsel the mother on nutrition for herself and the baby</li> <li>• Give appointment for her next visit</li> </ul>	<ul style="list-style-type: none"> <li>• Give Polio, Combined DPT/HB</li> <li>• Weigh and promote growth</li> <li>• Perform physical examination: Respiratory rate, Pulse, temperature</li> <li>• Perform WHO clinical staging</li> <li>• Treat opportunistic infection</li> <li>• Give Vitamin A 100,000 IU</li> <li>• Give albendazole one tablet</li> <li>• Do antibody test</li> <li>• Book an appointment for review by ART doctor</li> </ul>
18 months	
Women	Children
<ul style="list-style-type: none"> <li>• Perform physical examination: Pallor, Pulse, temperature, BP, breast condition</li> <li>• Counsel on family planning and provide client method of her choice</li> <li>• Perform WHO clinical staging</li> <li>• Treat opportunistic infection</li> <li>• Give co-trimoxazole prophylaxis if indicated</li> <li>• Take blood for laboratory test: CD4, FBC, Hb, RFT, LFT</li> <li>• Counsel the mother on nutrition for herself and the baby</li> <li>• Give appointment for her next visit</li> </ul>	<ul style="list-style-type: none"> <li>• Give Polio, Combined DPT/HB</li> <li>• Weigh and promote growth</li> <li>• Perform physical examination: Respiratory rate, Pulse, temperature</li> <li>• Perform WHO clinical staging</li> <li>• Give cotrimoxazole prophylaxis</li> <li>• Treat opportunistic infection</li> <li>• Give Vitamin A 100,000 IU</li> <li>• Give albendazole one tablet <ul style="list-style-type: none"> <li>○ Do antibody test</li> </ul> </li> <li>• Book the patient appointment for review by ART doctor</li> </ul>

## ANNEX 5

### WHO PAEDIATRIC CLINICAL STAGING

For children ≤ 12 years with laboratory evidence of HIV infection; HIV Antibody for >18 months, DNA or RNA virology testing for t <18 months.

<p><b>STAGE 1</b></p> <ul style="list-style-type: none"> <li>• Asymptomatic</li> <li>• Persistent generalized lymphadenopathy (PGL)</li> <li>• Hepatosplenomegaly</li> </ul>
<p><b>STAGE 2</b></p> <ul style="list-style-type: none"> <li>• Recurrent or chronic upper respiratory tract infections (otitis media, otorrhoea, sinusitis, 2 or more episodes in any 6 month period) Papular pruritic eruptions</li> <li>• Herpes zoster (1 or more episodes in 6 months)</li> <li>• Recurrent oral ulcerations ( 2 or more episodes in 6 months)</li> <li>• Lineal gingival Erythema (LGE)</li> <li>• Angular cheilitis</li> <li>• Parotid enlargement</li> <li>• Seborrhoeic dermatitis</li> <li>• Extensive Human papilloma virus infection or Molluscum infection (more than 5% body area or disfiguring)</li> <li>• Fungal nail infections</li> </ul>
<p><b>STAGE 3</b></p> <ul style="list-style-type: none"> <li>• Unexplained moderate malnutrition not adequately responding to standard therapy</li> <li>• Unexplained persistent diarrhoea (more than 14 days)</li> <li>• Unexplained persistent fever (intermittent or constant, for longer than 1month)</li> <li>• Oral candidiasis (outside neonatal period )</li> <li>• Oral hairy leukoplakia</li> <li>• Pulmonary tuberculosis</li> <li>• Severe recurrent presumed bacterial pneumonia (2 or more episodes in 6 months)</li> <li>• Acute necrotizing ulcerative gingivitis/periodontitis</li> <li>• Lymphoid interstitial pneumonitis (LIP)</li> <li>• Unexplained Anaemia (&lt;7gm/dl), neutropenia (&lt;1,000/mm<sup>3</sup>) or thrombocytopenia (&lt;30,000/ mm<sup>3</sup>) for more than 1 month</li> <li>• Chronic HIV associated lung disease including bronchiectasis</li> <li>• HIV related cardiomyopathy or HIV related nephropathy</li> </ul>
<p><b>STAGE 4</b></p> <p><i>Conditions where a presumptive diagnosis can be made using clinical signs or simple investigations:</i></p> <ul style="list-style-type: none"> <li>• Unexplained severe wasting or severe malnutrition not adequately responding to standard therapy</li> <li>• Pneumocystis Carinii Pneumonia</li> <li>• Recurrent severe presumed bacterial infections (2 or &gt; episodes within one year e.g. empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia )</li> <li>• Chronic orolabial or cutaneous Herpes simplex infection (of more 1 month duration)</li> <li>• Extrapulmonary tuberculosis, Kaposi's sarcoma, Oesophageal Candida</li> <li>• CNS Toxoplasmosis, HIV encephalopathy</li> </ul> <p><i>Conditions where confirmatory diagnostic testing is necessary:</i></p> <ul style="list-style-type: none"> <li>• CMV infection (CMV retinitis or infection of organ other than liver, spleen, or lymph nodes onset at age 1 month or more)</li> <li>• Cryptococcal meningitis (or other extrapulmonary disease)</li> </ul>

- Any disseminated endemic mycosis(e.g. extra-pulmonary Histoplasmosis, Coccidiomycosis, Penicilliosis)
- Cryptosporidiosis and Isosporiasis, Disseminated non-tuberculosis mycobacteria infection, Candida of trachea, bronchi or lungs, Acquired HIV related recto-Vesico fistula, Cerebral or B cell non-Hodgkin's Lymphoma
- Progressive multifocal leukoencephalopathy (PML)

**Presumptive Stage 4 diagnosis in children less than eighteen months old where virological confirmation of infection is not available**

- In a HIV exposed infant less than 18 months symptomatic with 2 or more of the following: oral thrush, +/- severe pneumonia, +/- severe wasting/malnutrition, +/- severe sepsis, severe immunosuppression should be suspected and ARV treatment is indicated.
- CD4 values where available should be used to guide decision making CD4% below 25 % requires urgent ARV treatment
- Other factors that support the diagnosis of clinical stage 4 HIV infections in a HIV exposed infant are recent maternal death or advanced HIV disease in mother.

## ANNEX 6-A Clinical Signs or Conditions in a child that may suggest HIV Infection

Specificity for HIV Infection	Signs/Conditions
Signs/conditions very specific to HIV infection	<ul style="list-style-type: none"> <li>▪ Pneumocystis Carinii Pneumonia</li> <li>▪ Oesophageal candidiasis</li> <li>▪ Extrapulmonary Cryptococcus</li> <li>▪ Invasive salmonella infection</li> <li>▪ Lymphoid interstitial pneumonitis</li> <li>▪ Herpes zoster (shingles) with multi-dermatomal involvement</li> <li>▪ Kaposi's sarcoma</li> <li>▪ Lymphoma</li> <li>▪ Progressive multifocal encephalopathy</li> </ul>
Signs/conditions common in HIV-infected children and uncommon in uninfected children	<ul style="list-style-type: none"> <li>▪ Severe bacterial infections, particularly if recurrent</li> <li>▪ Persistent or recurrent oral thrush</li> <li>▪ Bilateral painless parotid enlargement</li> <li>▪ Generalized persistent non-inguinal lymphadenopathy</li> <li>▪ Hepatosplenomegaly (in non-malaria endemic areas)</li> <li>▪ Persistent and/or recurrent fever</li> <li>▪ Neurological dysfunction</li> <li>▪ Herpes zoster (shingles), single dermatome</li> <li>▪ Persistent generalized dermatitis unresponsive to treatment</li> </ul>
Signs/conditions common in HIV-infected children but also common in ill uninfected children	<ul style="list-style-type: none"> <li>▪ Chronic, recurrent otitis with ear discharge</li> <li>▪ Persistent or recurrent diarrhoea</li> <li>▪ Severe pneumonia</li> <li>▪ Tuberculosis</li> <li>▪ Bronchiectasis</li> <li>▪ Failure to thrive</li> <li>▪ Marasmus</li> </ul>

## Annex 6-B: IMCI Clinical Signs or Conditions in a child that may suggest HIV Infection

### ASK or obtain from records or from earlier steps in the assessment:

- Has the child had more than one episode of severe chest infection\* requiring antibiotics (pneumonia) in the past 3 months?
- Has the child had one or more episodes of persistent or acute diarrhoea\* in the past 3 months?
- Has the child had fever (recurrent or intermittent for more than one month)?
- Does the child have acute or chronic or recurrent ear infection?

### THEN LOOK AND FEEL:

- Is the child low weight for age or growth faltering? (Weight curve flat or falling for 2 consecutive months)
- Any enlarged lymph glands in more than one of the following sites: neck, axillae groins?
- Is there oral thrush ?

### Classify As:

*Any THREE* signs	<b>Symptomatic HIV Infection</b>	<ul style="list-style-type: none"> <li>- Treat any underlying infection.</li> <li>- Give cotrimoxazole prophylaxis</li> <li>- Vit A &amp; Multivitamin supplementation</li> <li>- Assess child's feeding as necessary</li> <li>- Offer HIV testing &amp; counseling and follow up with ART services</li> <li>- Advise mother on home care</li> <li>- Follow up in 14 days</li> </ul>
Mother known to be HIV +	<b>Possible HIV infection</b>	<ul style="list-style-type: none"> <li>- Treat underlying infection</li> <li>- Give appropriate feeding advice</li> <li>- Start cotrimoxazole prophylaxis</li> <li>- Follow up in 14 days</li> <li>- If child is <math>\geq</math> 18 months, offer HIV test</li> </ul>
* TWO* signs	<b>Symptomatic</b>	<ul style="list-style-type: none"> <li>- Treat any underlying infection</li> <li>- Offer the mother a HIV test and counsel</li> </ul>

Consider symptomatic **HIV Infection** in every child found to have **Recurrent diarrhoea or Persistent Diarrhoea or Acute Ear infection (with pus discharge) or Chronic or Recurrent Ear Infection or Fever for more than 30 days or Low weight /growth faltering with no severe classification requiring urgent referral.**

## ANNEX 7

### Prevention of Mother to Child HIV Transmission (PMTCT) Monthly Report Form

Region: \_\_\_\_\_

Facility name: \_\_\_\_\_

Month (words): \_\_\_\_\_

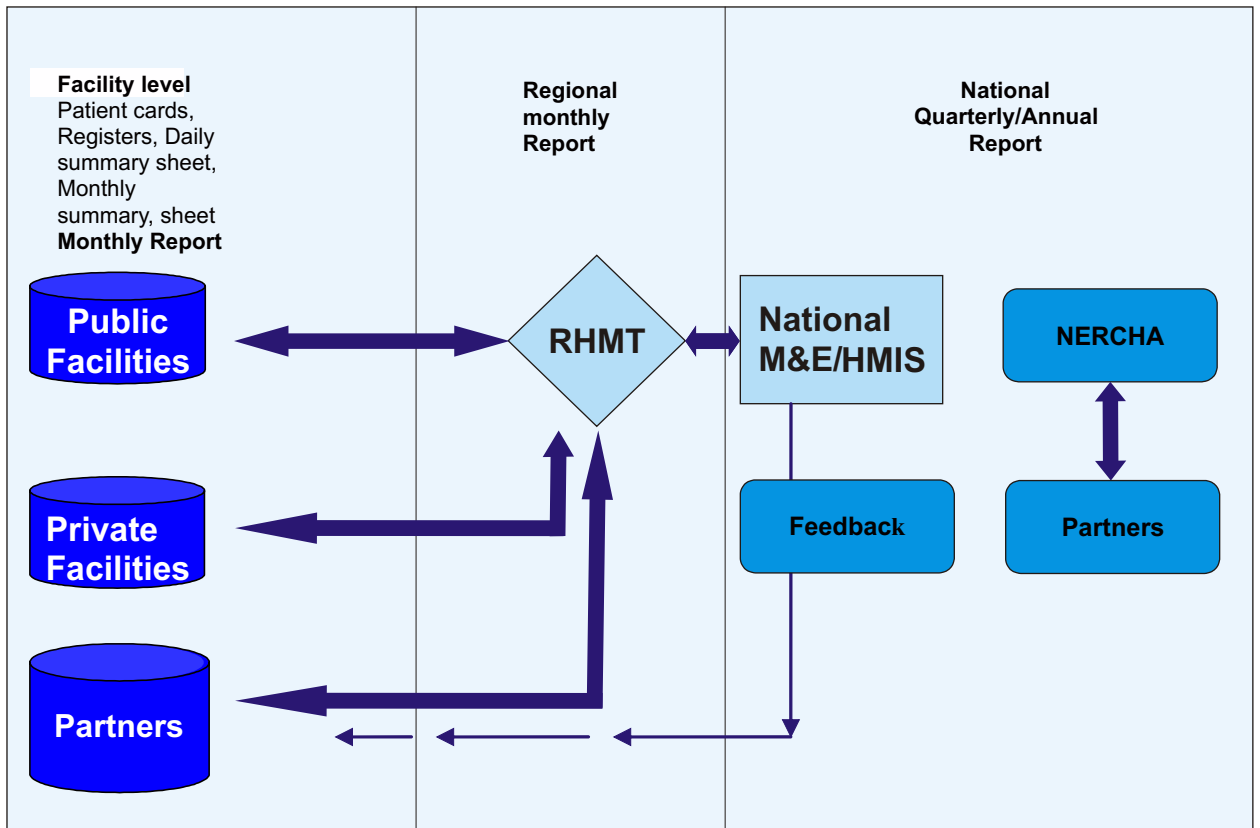
Year: \_\_\_\_\_

	Measure	Data
	<b>Use ANC register</b>	
<b>A</b>	First ANC visits	
<b>B</b>	Repeat ANC visits	
<b>C</b>	ANC HIV tests at first visit	
<b>D</b>	ANC HIV tests at repeat visit	
<b>E</b>	Total ANC HIV tests (C + D)	
<b>F</b>	Received HIV test results	
<b>G</b>	ANC HIV+	
<b>H</b>	Women given NVP dose at ANC	
<b>I</b>	Women given AZT dose at ANC	
<b>J</b>	Women given infant NVP dose at ANC	
	<b>Use Maternity register</b>	
<b>K</b>	Women tested for HIV at the maternity	
<b>L</b>	Women testing HIV+ at maternity testing	
<b>M</b>	Women given NVP dose at maternity	
<b>N</b>	Number of HIV infected women delivered	
<b>O</b>	Total number of deliveries	
<b>P</b>	Infant given NVP dose at maternity	
	<b>Use Postnatal register</b>	
<b>Q</b>	Women known to be HIV infected at postnatal visit	
<b>R</b>	Women who received ARV prophylaxis in pregnancy/labour	
<b>S</b>	Women with unknown status at postnatal visit	
<b>T</b>	Women tested for HIV at postnatal visit	
<b>U</b>	Women testing HIV+ at postnatal visit	
<b>V</b>	Total HIV+ women at postnatal visit	
<b>W</b>	Number of male partners with known HIV status	
<b>X</b>	Number of women started on family planning method	
<b>Y</b>	Number of HIV+ women started on cotrimoxazole	
<b>Z</b>	Number of HIV+ women started on micronutrient/multivitamins	
<b>AA</b>	Number of HIV+ women started on ARV therapy	
<b>BB</b>	Number of HIV+ women started on ARV therapy this month	
	<b>Use Child Welfare Clinic register</b>	
<b>CC</b>	Number of infants exposed	
<b>DD</b>	Number of Infants given ARV prophylaxis at birth	
<b>EE</b>	Number of Infants given ARV prophylaxis at this visit	
<b>FF</b>	Number of infants six months old	
<b>GG</b>	Number of Infants on exclusive breastfeeding up to 6 months	
<b>HH</b>	Number of Infants on exclusive replacement feeding since birth	
<b>II</b>	Number of HIV exposed infants started on cotrimoxazole	
<b>JJ</b>	Number of HIV exposed infants started on micronutrient/multivitamins	
<b>KK</b>	Number of HIV exposed infants who are 18 months old	
<b>LL</b>	Number of HIV exposed infants tested for serology at 18 months	
<b>MM</b>	Total number of HIV+ infants	
<b>NN</b>	Number of HIV+ infants started on ARV therapy	
<b>OO</b>	Number of HIV+ infants started on ARV therapy this month	

ARV=Antiretroviral; NVP=Nevirapine; AZT=Zidovudine

## Annex 8

### PMTCT Data Reporting Flow for Swaziland



**Unite for Children**  
**Unite Against AIDS**

