The United Republic of Tanzania
Ministry of Health and Social Welfare

National Guidelines for Comprehensive Care Services for Prevention of Mother-to-Child Transmission of HIV and Keeping Mothers Alive

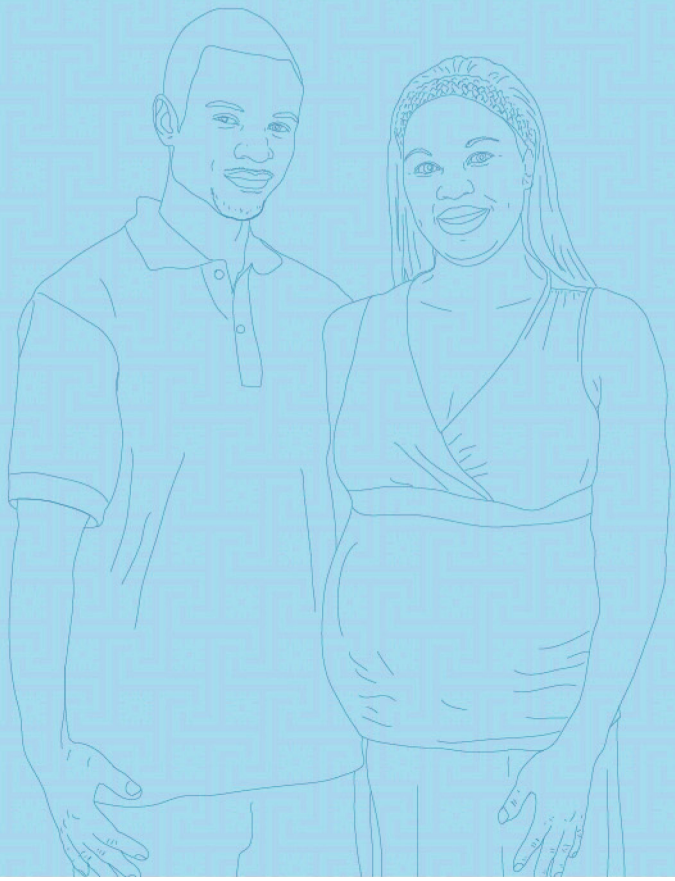

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Table of Contents

Abbreviations and Acronyms

3TC	Lamivudine
ABC	Abacavir
AHU	Adolescent Health Unit
AFASS	Acceptable, feasible, affordable, sustainable and safe
AIDS	Acquired immunodeficiency syndrome
ANC	Antenatal care
ART	Antiretroviral treatment
ARV	Antiretroviral
ATV/r	Atazanavir/ritonavir
AZT	Azidothymidine, also known as zidovudine
BCG	Bacillus Calmette-Guérin
BD	Twice daily
CDC	US Centers for Disease Control and Prevention
CPT	Cotrimoxazole preventative therapy
CTC	Care and Treatment Clinic
TMP-SMX	Cotrimoxazole
d4T	Stavudine
DBS	Dried blood spot
ddI	Didanosine
DNA-PCR	Deoxyribonucleic acid-polymerase chain reaction
DMO	District Medical Officer
DRCHCO	District Reproductive and Child Health Coordinator
EFV	Efavirenz
ELISA	Enzyme-linked immunosorbent assay
EPI	Expanded Program on Immunization
FTC	Emtricitabine
HCW	Healthcare worker
HEID	HIV Early Infant Diagnosis
HIV	Human immunodeficiency virus
HLD	High-level disinfection
HPV	Human papillomavirus
HTC	HIV testing and counselling
IEC	Information, education and communication
IMCI	Integrated management of childhood illnesses
IPT	Isoniazid preventive therapy
LPV/r	Lopinavir/ritonavir
MSD	Medical Stores Department

MoHSW	Ministry of Health and Social Welfare
MTCT	Mother-to-Child Transmission of HIV
NACP	National AIDS Control Programme
NGO	Nongovernmental organization
NNRTI	Non-nucleoside reverse transcriptase inhibitor
NRTI	Nucleoside reverse transcriptase inhibitor
NVP	Nevirapine
OI	Opportunistic infection
OPV	Oral polio vaccine
PCP	Pneumocystis pneumonia
PCR	Polymerase chain reaction
PEP	Post-exposure prophylaxis
PI	Protease inhibitor
PLHIV	People living with HIV
PMTCT	Prevention of Mother-to-Child Transmission of HIV
RCH	Reproductive and child health
RCHCO	Regional Reproductive and Child Health Coordinator
RNA-PCR	Ribonucleic acid-polymerase chain reaction
sdNVP	Single-dose nevirapine
STI	Sexually transmitted infection
TB	Tuberculosis
TDF	Tenofovir
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary counselling and testing
WHO	World Health Organization
ZDV	Zidovudine, the generic name for azidothymidine (AZT)

Acknowledgements

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The MoHSW also wishes to express sincere appreciation to the leadership and guidance to the PMTCT Technical Working Group for providing direction on this review. This third edition of the guidelines incorporates the most recent national policies, scientific knowledge and international standards relevant to PMTCT. The PMTCT Technical Working Group brought together a multidisciplinary team of experts who ensured the technical and clinical accuracy of these guidelines. The guidelines will provide direction to the scale-up and continued provision of PMTCT services in Tanzania.

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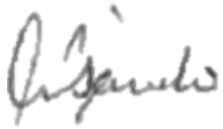

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Foreword

The government of Tanzania has endorsed several global commitments and the respective plans of actions, including MDGs; the UNGASS declaration; the Abuja High-Level Partner Forum on PMTCT (2005); Universal Access to Comprehensive Prevention, Treatment and Care Program by 2010; and the Global Elimination of Mother-to Child Transmission of HIV (eMTCT) strategy, 2010-2015.

Nationally, the country is implementing the National Road Map Strategic Plan to Accelerate the Reduction of Maternal, Newborn and Child Deaths in Tanzania (2008-2015) to improve maternal, newborn and child care in line with the tenets of the New Delhi Declaration of 2005. It is also in line with the Primary Health Service Development Programme (PHSDP/MMAM, 2007-2017), the Health Sector Strategic Plan III and the Health Policy (2007). Implementation of the PMTCT programme complements these efforts and also contributes to the commitment to combat HIV as reflected in the National Strategy for Growth and Reduction of Poverty (NSGRP).

The Ministry of Health and Social Welfare (MoHSW) has been implementing PMTCT services in the country since 2000 and by 2004 services were been scaled up to cover all regions. Implementation of these services was guided by the National PMTCT Guidelines that were developed in 2004 and revised for the first time in 2007. In 2011, the WHO provided new updates on antiretroviral treatment for prevention of mother to child transmission of HIV and for the health of the mother. The guidance was made to accelerate the achievement of elimination of new HIV infections in children and keep their mothers alive and healthy. The recommendations represent a significant shift in current practice, including initiating all HIV positive pregnant women on fixed dose combination of Tenofovir/Lamivudine/Efavirenz (TDF/3TC/EFV) for life regardless of CD4 count, and reduced duration of prophylaxis for children to six weeks. Moreover, the new recommendations continue to emphasise the extension of the duration of breastfeeding for women living with HIV up to one year with relatively safe infant feeding options.

The recommendations, the scientific findings and the commitment made by Tanzania to achieve elimination of new HIV infections in children by 2015 compelled the Government of Tanzania to revise the PMTCT National Guidelines in order to further reduce MTCT of HIV and to improve quality of life among HIV-exposed or-infected children and their parents.

It is envisaged that these guidelines will be used as a reference for different stakeholders, including those in research, learning institutions, health facilities, individuals and organisations implementing PMTCT services in the country. The MoHSW is taking all the necessary steps to ensure that there is a smooth transition to the implementation of these revised guidelines. This includes setting in place the systems and structures to support its implementation as well as revising the National PMTCT Training Package and conducting refresher training to emphasise these changes. As information and knowledge about HIV and AIDS continues to evolve, the MoHSW will remain committed to stay abreast of scientific developments in the field and ensuring that PMTCT services are informed by these developments.

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Executive Summary

- PMTCT services provided in Tanzania include routine HIV testing and counselling; provision of lifelong antiretroviral treatment for all HIV positive pregnant and lactating women; antiretroviral (ARV) prophylaxis for HIV-exposed infants; safer delivery practices; early infant HIV diagnosis and treatment; counselling and support for safer infant feeding practices; long-term follow-up care for mother and child; and services for family planning.
- Routine, provider-initiated HIV testing is the recommended strategy for HIV testing in Tanzania's reproductive and child health (RCH) services. All women of reproductive age and their partners should receive HIV testing and counselling in RCH services. Pregnant women and their partners should receive pre-test HIV information at their first antenatal visit or as soon as possible thereafter. They should also be given the opportunity to ask questions about the information provided. HIV testing should then be performed during this visit unless the woman declines.
- All clients tested for HIV should receive post-test counselling regardless of the HIV test result. The HIV test result should always be given in person within the same day of testing.
- Antenatal care (ANC) for women infected with HIV includes the same services provided for all pregnant women. However, obstetric and medical care should be expanded to address the specific needs of women living with HIV.
- All pregnant and breastfeeding women who test positive for HIV should be offered lifelong antiretroviral treatment (ART) composed of a fixed-dose single tablet regimen of tenofovir/lamivudine/efavirenz (TDF/3TC/EFV) taken once daily or given another first-line alternative ART regimen as recommended by the national ART guidelines.
- ART for HIV positive women should be started at any point during a pregnancy or breastfeeding period (regardless of CD4 count or WHO clinical stage). ART should be continued for life.
- All infants born to women living with HIV should receive daily nevirapine (NVP) as soon as possible after birth up to the age of 6 weeks. This applies to all HIV-exposed infants regardless of feeding option.
- In addition, safer obstetric practices that reduce the risk of MTCT should be practiced in all health facilities. These include practicing Standard Precautions during all patient care, minimising vaginal examinations, avoiding prolonged labour, avoiding artificial rupture of membranes, avoiding unnecessary trauma during delivery, minimising the risk of postpartum haemorrhage and using safe transfusion practices.
- The infant feeding recommendation for women living with HIV is exclusive breastfeeding for the first six months of life. Complementary foods should be introduced at 6 months of age while continuing to breastfeed to 12 months of age. Exclusive replacement feeding for the first 6 months of life with commercial infant formula is recommended only when it is acceptable, feasible, affordable, sustainable and safe.
- Every infant born to a mother living with HIV should receive Cotrimoxazole Preventative Therapy (CPT) to prevent opportunistic infections beginning at 4 weeks of age or as soon as possible thereafter. CPT should continue until HIV is ruled out, after complete cessation of breast feeding.
- To diagnose HIV infection in children less than 18 months of age, HIV viral testing using deoxyribonucleic acid-polymerase chain reaction (DNA-PCR) is required. Viral tests are recommended at 4–6 weeks of age for all HIV-exposed infants. In children 18 months of age or older, HIV antibody tests can be reliably used to diagnose HIV infection in the same manner as they are used in adults.

- All HIV-exposed infants should be tested for HIV using dried blood spot (DBS) - DNA PCR at the age of 4 – 6 weeks. For infants with a positive virological test result, ART should be started without delay according to national guidelines.
- If the infant is breastfeeding, HIV testing should be repeated 6 weeks after the complete cessation of breastfeeding.

CHAPTER 1: Introduction

1.1 Development and use of the national PMTCT guidelines

The *National Guidelines for Comprehensive Care Services for Prevention of Mother-to-Child Transmission of HIV and Keeping Mothers Alive* summarise national recommendations for the delivery of PMTCT programme services. The guidelines are based on national HIV and AIDS policies and strategies and also on the WHO recommendations for PMTCT and infant feeding. They were developed under the direction of the Ministry of Health and Social Welfare (MoHSW), Reproductive and Child Health Section and the National AIDS Control Program (NACP). Guidance on technical updates was provided by the PMTCT Technical Working Group.

These guidelines are intended to promote and support the delivery of quality HIV prevention, care, treatment, and support services. They provide an important reference for PMTCT programme staff and healthcare workers (HCWs). The guidelines should be referred to when developing institutional policies and procedures, training, and quality assurance initiatives for PMTCT programmes. The PMTCT guidelines focus on maternal, child and family health; they are intended to be used together with other relevant guidelines and protocols, including those for clinical management of HIV and AIDS, tuberculosis (TB) and malaria, as well as for HIV testing and counselling and infant feeding.

1.2 Global and national overview of the HIV and AIDS epidemic

The HIV pandemic remains a major public health problem worldwide, with devastating effects in Sub-Saharan Africa. Since the beginning of the epidemic, more than 60 million people have been infected with HIV and nearly 30 million people have died of HIV-related causes.

The 2012 UNAIDS Global Report indicates that approximately 69% of the estimated 34 million adults and children living with HIV were from Sub Saharan African (23.5 million). In Sub-Saharan Africa, women now account for almost 60% (12.1 million of 20.3 million) of the adults living with HIV. The number of children worldwide (age 0–14) living with HIV has increased to 3.3 million.

The global community and national governments have made great strides over the years in responding to the epidemic by informing their populations, training HCWs, scaling-up programmes and services, and monitoring progress. In Sub-Saharan Africa an estimated 320,000 (or 20%) fewer people died of AIDS-related causes in 2009 than in 2004, when antiretroviral therapy began to be dramatically expanded. The estimated 260,000 children who died from AIDS-related illnesses in 2009 globally were 19% fewer than the estimated 320,000 who died in 2004. This trend reflects the steady expansion of PMTCT services and an increase in access to treatment.

In Tanzania the first cases of HIV were reported in 1983 in the Kagera region. By 1985, there were an estimated 140,000 people living with HIV (1.3% prevalence); by 1990, this had grown to about 900,000 (7.2% prevalence). In 2009, 1.4 million people were estimated to be living with HIV, approximately 12% of them children (UNAIDS 2010). An estimated 5% of

adults age 15–49 were infected with HIV. However, this number has been on the decline since it peaked at 8% in 1997.

Recent estimates shows that rural HIV prevalence (4.3%) is lower than that of urban areas (7.2%).HIV prevalence is higher among women (6.2%) than men (3.8%), (THMIS 2012), and is even higher for women attending antenatal clinics (6.9% in 2008). AIDS-related mortality rates among children under five years of age are still unacceptably high. It is estimated that 200,000 children under 15 years of age are living with HIV (UNAIDS 2010), and that 90% of them may have acquired the infection through MTCT.

Different parts of the country are disproportionately affected. The prevalence of HIV infection ranges from 1.5% in Manyara region to 14.8% in Njombe region (THMIS 2011-12). Factors that have driven the epidemic include low and inconsistent use of condoms; multiple sex partners; mobility; transactional sex; cross-generational sex; poor quality of transfused blood; lack of male circumcision; mother-to-child transmission; gender inequities accompanied with poverty, and most-at-risk populations (TACAIDS, 2009).

In spite of the challenges, significant progress has been made in the country. The number of men and women testing for HIV and receiving results has doubled from 15% in 2003 to approximately 32% in 2008. The proportion of pregnant women who access PMTCT services has grown from almost none at the pilot of PMTCT services in 2000 to 61% in 2008, and the access to antiretroviral (ARV) medications continues to grow nationwide.

The Health Sector HIV/AIDS Strategic Plan (2008–2012) was intended to consolidate interventions to prevent HIV infections and reduce HIV vulnerability among the Tanzanian population. All those who are infected and affected were expected to receive treatment, care and support.

The annual number of new infections exceeds by far the number of individuals enrolled into ARV treatment. The high incidence of new HIV infections in the country indicates that more effort is required in HIV prevention in order to maintain the gains made through roll out of care and treatment programmes. In view of the country's commitment to universal access to HIV prevention, care and treatment and to the Millennium Development Goals (MDGs), re-invigoration of HIV prevention is an absolute necessity.

1.3 Gender and HIV

Both men and women are vulnerable to HIV infection. Women in Africa are at least 1.4 times more likely than men to be infected with HIV. Biological and cultural factors contribute to the higher rates of HIV infection among women. Biologically, HIV is more easily transmitted from men to women than from women to men. Furthermore, 11% of young women and 10% per cent of young men aged 15 to 24 in Tanzania have had sex before the age of 15; and women tend to have older sexual partners.

Other cultural, traditional, and social factors that increase women's risk of becoming infected with HIV include:

- Early marriages
- Concurrent multiple sexual partners
- Lack of sex education
- Traditional male attitudes about sex
- Coercion by men who have multiple sexual partners
- Sexually transmitted infections (STIs)

- Lack of comfort with and knowledge about the healthcare system
- Traditional practices like cleansing of widows
- Peer pressure for young women to engage in unsafe sexual practices
- Inability of women to negotiate safer sex because of economic dependence or powerlessness in their relationships

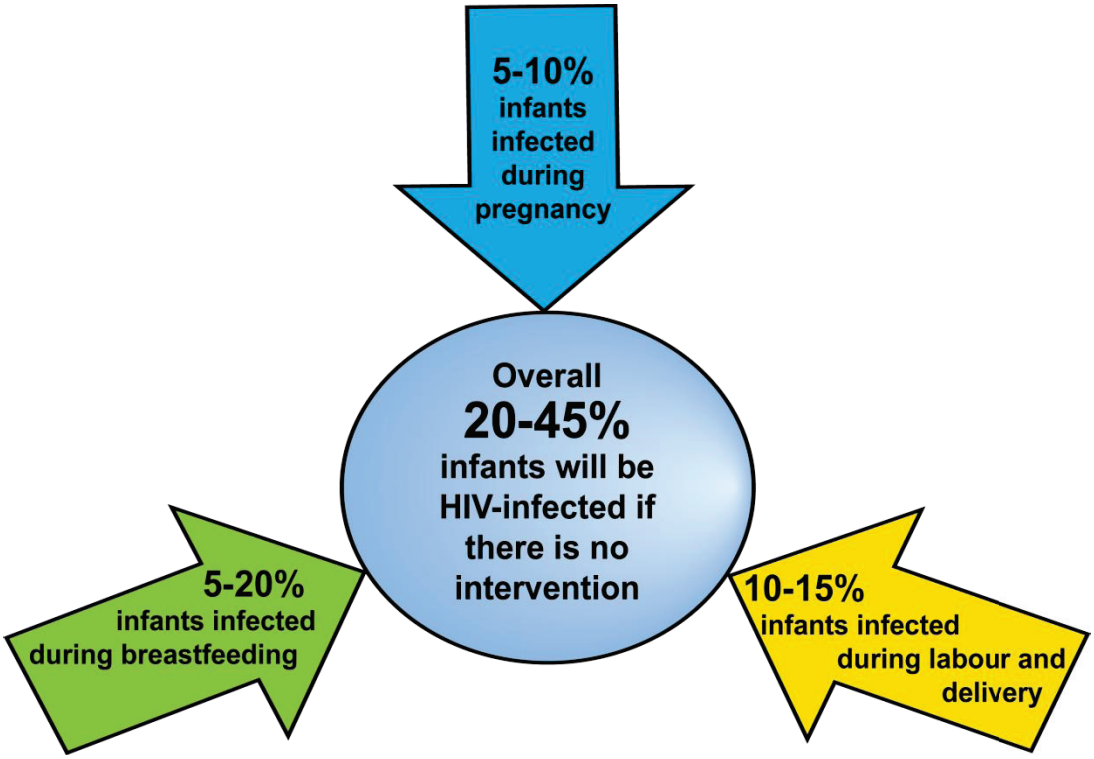
It is important to consider the influence of gender on vulnerability to HIV infection when working to prevent MTCT of HIV. This can only be addressed if both sexes appreciate their interrelated roles. Practices that increase the risk of MTCT can be modified once communities understand the relationship between these practices and the transmission of HIV. Introducing new behavioural models to communities will require the support of local leaders—governmental, religious, and others.

CHAPTER 2: Overview of HIV Prevention in Mothers and Families

2.1 Basic facts about mother-to-child transmission of HIV

Mother-to-child transmission (MTCT) of HIV refers to the transmission of HIV infection from HIV-infected mothers to their infants. MTCT can occur during pregnancy, labour and delivery, and breastfeeding. Without intervention, the overall risk of MTCT is approximately 20% to 45%.

Figure 2.1: Estimated HIV outcomes for infants born to women living with HIV



There are multiple risk factors that increase the chance that a mother will transmit HIV to her child:

- High maternal viral load and low CD4 count, which occur in newly infected individuals and in advanced stages of HIV disease (AIDS)
- Virulence of viral subtypes and strains. For example; MTCT rates are higher with HIV-1 infection than with HIV-2 infections.
- Obstetric and neonatal risk factors, as outlined in Table 2.1.

Table 2.1: Viral factors, maternal conditions, and obstetric interventions that may increase the risk of HIV transmission

During Pregnancy	During Labour and delivery	When Breastfeeding
▪ High maternal viral load and low CD4 count (newly infected individuals or advanced AIDS) ▪ Viral, bacterial or parasitic placental infections (e.g., malaria) ▪ Sexually transmitted illnesses (STIs)	▪ High maternal viral load and low CD4 count (new infection or advanced AIDS) ▪ Chorioamnionitis (from untreated STIs or other infections) ▪ Rupture of membranes for more than 4 hours before delivery[a]	▪ High maternal viral load and low CD4 count (new infection or advanced AIDS) ▪ Oral disease in the infant (e.g., thrush or mouth sores) ▪ Breast abscesses, nipple fissures, and mastitis ▪ Duration of breastfeeding ▪ Mixed feeding (i.e., breastfeeding combined with other foods or fluids) before 6 months of age

a. Studies have found that there is an increased rate of HIV transmission after a mother's membranes have been ruptured for more than 4 hours before delivery. However, the key point is that the longer the membranes are ruptured, the higher the risk of HIV transmission.

2.2 Goal of Tanzania's PMTCT programme

The aim of the PMTCT programme is to eliminate MTCT of HIV and to improve care for infected parents and children by introducing and scaling up comprehensive PMTCT services within all facilities providing RCH services.

The goal of the PMTCT programme is virtual elimination[1] of MTCT of HIV by 2015.

While targeting pregnant women and those of reproductive age, their sexual partners, children, families and the community, the program has the following objectives. To:

1. Increase the percentage of HIV positive pregnant and breastfeeding women who receive ARVs.
2. Ensure access to care and treatment for mothers and babies living with HIV.
3. Improve child survival among HIV-exposed and infected children.

For more information on the structure and goals of the PMTCT programme, see *Chapter 9: PMTCT Programme Management, Monitoring, Evaluation and Supply Chain Management.*

[1]Virtual elimination refers to 90% reduction in estimated number of new infections in infants; and an MTCT rate of <5%, which is associated with at least 90% of all the HIV – exposed infants being alive and uninfected with the virus at the age of 2 years.

2.3 Four elements of a comprehensive approach to PMTCT

Four elements of a comprehensive approach

A comprehensive approach to PMTCT consists of 4 elements that are discussed in the following chapters of these guidelines:

1. Primary prevention of HIV among women of childbearing age and their partners
2. Prevention of unintended pregnancies among women living with HIV
3. Prevention of vertical transmission of HIV from mothers to their infants
4. Provision of treatment, care and support to women living with HIV and their partners, infants, and families

Primary prevention of HIV among women and their partners

Primary prevention is the most effective means to control the spread of HIV and minimise its impact on individuals, families, and communities. Preventing HIV infection in women of childbearing age is the best way to prevent MTCT.

Practice Points

- Sexually active women and men should be encouraged to use safer sex practices including barrier methods such as condom use, reduce the number of sexual partners, and stay faithful to their sexual partner.
- Healthcare workers at RCH clinics should ensure that HIV testing and counselling is integrated and offered to all women of childbearing age, their partners, and children.

Practice Points

- Gender concerns and equality should be considered when offering PMTCT services
- All health care providers should emphasise early diagnosis and treatment of STIs in their practice

Preventing and treating STIs is an important component in HIV prevention. Co-infection with an STI increases HIV acquisition significantly. All healthcare providers should emphasise early diagnosis and treatment of STIs in their practice.

Another basic effort in HIV prevention involves preventing the spread of HIV in healthcare settings. All facilities in Tanzania should use Standard Precautions to prevent transmission of HIV. Specific methods to reduce HIV transmission in the workplace are given in *Chapter 8: Safety and Supportive Care in the Work Setting*.

Young people should be provided with information about and access to HIV prevention services and should be encouraged to abstain from sexual activity until they can make responsible decisions.

Treating HIV-infected individuals with ARVs can also help prevent transmission of the virus to their partners or spouses.

Prevention of unintended pregnancies among women infected with HIV

Family planning is part of a comprehensive public health strategy to prevent MTCT. All women living with HIV and their partners should receive family planning counselling and should be empowered to access and utilise effective contraceptive methods in order to avoid *unintended pregnancies*. A woman's/couple's choice of contraceptive methods should be based on her health status and personal preference. The family planning option of her/their choice should be provided on site or through referral to the nearest facility when the method of choice is not available.

Dual protection is the use of one or more contraceptive methods that prevents STIs, (including HIV) *and* unintended pregnancy. For example, the use of birth control pills and condoms (male or female) would provide dual protection. For more information on contraceptive devices and methods available nationally, see *Appendix 2-A: Contraceptive Methods*.

Practice Points

- Couples/Women living with HIV should be empowered to make informed decision on the method of choice for family planning.
- Dual protection is the recommended form of contraception for couple/women living with HIV.
- All pregnant HIV-infected women and their partners (HIV infected and uninfected) should be encouraged to use condoms during pregnancy to prevent STIs and HIV infection or re-infection.
- Every woman living with HIV who intends to stop use of contraceptives and become pregnant should be provided with adequate counselling on PMTCT.

Interventions to prevent HIV transmission from mothers to their infants

The PMTCT program offers a range of services and interventions that reduce the risk of MTCT. These include HIV education, testing and counselling for pregnant and breastfeeding women and their partners, antiretroviral treatment (ART) and prophylaxis, safer delivery practices, and counselling on safer infant feeding and care of the HIV-exposed infant. These interventions are discussed in detail in subsequent chapters of these guidelines.

Treatment, care and support for HIV-infected women and their families

Providing HIV treatment, care and support is critical for enabling women living with HIV to address their health needs and ensure the well-being of their children and families. The PMTCT program should strive to provide comprehensive HIV care and treatment services, and when this cannot be provided in RCH clinics it is important to strengthen coordinated referral systems to ensure that women and their families have access to comprehensive HIV care services at appropriate clinics.

Lifelong ART is recommended for all HIV-positive pregnant and breastfeeding women regardless of their CD4 count or WHO clinical stage or gestational age. However, all women diagnosed with HIV infection should have clinical and immunological evaluation to monitor their progress as they start ART. Care and treatment services to pregnant and breastfeeding women living with HIV should be provided in RCH settings or by referral when care and treatment services cannot be provided in RCH clinics. More information on ART can be found in *Chapter 5: Specific Interventions to Prevent MTCT*, and *Chapter 7: Comprehensive Care and Support for Mothers, Babies and Family Members with HIV Infection*.

Infants born to mothers living with HIV will require close follow-up and monitoring of the following: growth and development, immunizations, prophylaxis against HIV infection and opportunistic infections (ARVs and CTX), early testing for HIV and nutritional supplements. All HIV-infected infants should be provided with comprehensive paediatric HIV care and treatment services. These services are discussed further in Chapters 5, 6 and 7.

Table 2.2: Services that contribute to a comprehensive approach to PMTCT

PMTCT services	How these services contribute to a comprehensive approach
Routine HIV testing and counselling	▪ Identifies women/couples living with HIV so that they can receive PMTCT services and HIV care, treatment and support ▪ Identifies women who are currently negative but at high risk for acquiring infection during pregnancy/breastfeeding period. Women/couples should be encouraged to continue using protective interventions
Comprehensive antenatal care (ANC)	▪ Monitors pregnancy progress, early recognition and treatment of pregnancy-related complications such as STIs and anaemia, prevention of malaria and TB, counselling mother on optimal nutrition ▪ Provision of preventative methods such as cotrimoxazole preventive therapy (CPT) for malaria
Lifelong ART for HIV positive pregnant and breastfeeding women	▪ Improves maternal health, which in turn improves child's survival chances ▪ Reduces maternal viral load, which in turn reduces infant exposure to the virus and risk of MTCT
ARV prophylaxis for HIV-exposed Infants	▪ Reduces the chances of the HIV-exposed infant from getting infected with HIV from the mother in the postpartum period
Safer delivery practices	▪ Reduces likelihood of labour and delivery complications and infant exposure to HIV during labour and delivery
Counselling for safer infant feeding practices	▪ Promotes safer infant feeding options to improve child survival and reduces infant exposure to the virus hence reducing MTCT
Postpartum care for mother	▪ Supports mother's health and nutrition status and addresses a woman's family planning needs.

PMTCT services	How these services contribute to a comprehensive approach
Early infant HIV diagnosis, treatment and treatment	▪ Identifies infants infected with HIV and starts them on ART to improve their survival ▪ Monitors and manages signs and symptoms of infection in children exposed to HIV; ensures HIV early infant diagnosis (HEID) and CPT for infants starting at 4 weeks of age; ensures infant confirmatory testing after cessation of breastfeeding, facilitates early initiation of ART for HIV infected children
Partner and family involvement	▪ Identifies the partner who is HIV infected or who is at risk of being infected (discordant), children and other family members to receive HIV care, treatment and support
Family planning	▪ Reduces risk of unintended pregnancy by giving proper counselling to both partners on family planning and dual protection

CHAPTER 3: Stigma and Discrimination Associated with HIV and AIDS

3.1 HIV-related stigma and discrimination

Stigma and discrimination play an important role in fuelling the HIV epidemic in Tanzania. Reducing HIV-related stigma is important in responding to the epidemic and in bringing about effective care for persons living with and affected by HIV.

HIV-related stigma has many negative consequences. Stigmatised individuals experience physical and social isolation and are subjected to gossip, rumour and name calling. The stigma associated with HIV can lead people who are living with HIV (PLHIV) to develop feelings of guilt, inferiority, self-blame and despair. Those living or working with PLHIV such as close relatives and /or HCWs, may also be stigmatised by association.

HIV and AIDS-related stigma can also lead to serious discrimination as when PLHIV are denied access to basic rights such as education, housing, employment and freedom of movement. The loss of social status and decision-making power in the household and community can be devastating for those affected.

PLWHIV often find empathy, understanding, and support from family members, friends and their communities.

Stigma: Stigmatisation is the act of attributing undesirable qualities to someone who is perceived as being different from the social ideal or norm. HIV-related stigma refers to the unfavourable attitudes and beliefs held about PLHIV and those thought to be living with HIV.

Discrimination: Discrimination is any distinction, exclusion, restriction or preference which has the purpose or effect of limiting the equal recognition, enjoyment or exercise of rights and freedoms by all persons.

Denial: Denial describes the refusal of individuals (and communities) to acknowledge that they may be at risk of HIV infection or be already infected or affected. This disownment of responsibility and disassociation from the truth often stems from an unwillingness to face the stigma associated with HIV infection.

Stigmatisation reflects an attitude.

Discrimination is an act or behaviour.

Stigma, gender and PMTCT programmes

Women are usually the first of the two partners in a couple to be tested for HIV. If they are found to be HIV positive, their partners often blame them unfairly for introducing HIV into the family. As a consequence of HIV-related stigma, women may experience violence, loss of shelter and economic support, and exclusion from their family and community. Fear of social stigma; abandonment by family, friends and community; and extreme feelings of isolation and loneliness, as well as the perceived and very real threat of violence: all these may cause women to keep their HIV status a secret.

The fear of knowing and eventually disclosing their HIV status deters women from seeking PMTCT services and results in poor adherence to PMTCT interventions, in particular safer infant-feeding decisions, decisions on taking and adhering to ARV medication, condom use and family planning, and preference not to deliver at healthcare facilities. Being open about one's HIV status is one of the most powerful ways to reduce HIV-related stigma. Disclosing one's status also has other benefits. It encourages partners to be tested for HIV and prevent the spread of HIV by allowing those infected to openly take appropriate prevention steps. Disclosure also allows individuals to receive support from partners, family and friends. Disclosure is stressful for clients and requires counselling support and assistance from HCWs and peers.

Healthcare workers and stigma

When HCWs deliver PMTCT services, they need to be aware of the scope and intensity of stigma suffered by women and their families. More importantly, they should be acutely aware of their own stigmatising attitudes and behaviours towards PLHIV. Healthcare workers, family members and community members may simultaneously express both sympathetic and stigmatising attitudes towards PLHIV. Frequently, it is the fear of acquiring HIV through occupational exposure or of being stigmatised because of their close association with HIV-infected clients that causes an HCW to have negative attitudes towards PLHIV.

3.2 Actions to reduce stigma in PMTCT programmes

The National PMTCT programme recognises the importance of taking action to reduce stigma. Healthcare workers should be encouraged to take the lead in challenging negative attitudes and behaviour, both in their work settings and in the community.

Role of health care workers in reducing stigma

It is the responsibility of all health care workers to abide by policies and procedures that protect clients from discrimination in healthcare facilities. Client's confidentiality should be maintained at all times. Facilities should have procedures in place for reporting discrimination. Healthcare workers should familiarise themselves with the relevant sections of the *National HIV and AIDS (Control and Prevention) Act of 200*8.

All HCWs should follow Standard Precautions of preventing infections in healthcare settings. For more information on implementing Standard Precautions, see *Chapter 8: Safety and Supportive Care in*

Strategies for reducing HIV-related stigma in PMTCT programmes

- Read and understand the HIV and AIDS act of 2008
- Develop ways to encourage the participation of male partners in PMTCT services.
- Offer HIV education to all women and their partners in RCH services.
- Apply Standard Precautions to all clients regardless of assumed or established HIV status.
- Get to know the local community in order to identify and address local HIV-related stereotypes and rumours.
- Reach out to community service organisations that work with HIV-infected clients.
- Advocate for and inform women of their legal right to challenge discrimination and stigmatisation.
- Invite PLWHIV to participate in PMTCT initiatives and awareness campaigns.

the Work Setting.

The healthcare facility's anti-discrimination policies should be promoted to HCWs and clients. Clients should be notified that they may file a complaint if they feel they have been the target of discrimination as per *HIV and AIDS Act*.

In addition to abiding by established policies and standard operating procedures, training HCWs about HIV transmission risks, infection prevention and control, as well as issues of stigma associated with HIV and AIDS is of utmost importance. The training should be geared towards addressing employees' attitudes towards PLWHIV, correcting misinformation regarding HIV and AIDS, and assessing HCWs' skills in creating a non-stigmatizing environment.

CHAPTER 4: HIV Testing and Counselling

4.1 Introduction

HIV counselling in RCH settings refers to a confidential dialogue between a client and an HCW aimed at enabling the client to make an informed personal decision about HIV testing in order to know their serostatus. HIV testing and counselling (HTC) is the gateway to HIV care and treatment including PMTCT interventions and a fundamental part of good clinical management. HTC should be accessible to all women of childbearing age and their partners.

Role of the HCW in HTC

The healthcare worker's role when counselling in RCH settings is to support clients' decision-making process by:

- Listening to them
- Understanding the choices they need to make
- Helping them explore their circumstances and options
- Correcting misconceptions; providing information and providing reassurance
- Assisting them to develop the self-confidence necessary to carry out their decisions

Advantages and disadvantages of HIV testing for women and their partners

The primary advantage of HTC is that it enables people to learn of their HIV status and to make decisions based on this knowledge.

For women who test HIV negative, HTC provides an opportunity to receive information and support to remain uninfected in future. For women who test HIV positive, HTC may help them to:

- Receive appropriate and timely interventions to reduce MTCT if they are pregnant or breastfeeding
- Receive information and counselling about the prevention of HIV transmission to others
- Disclose their serostatus to their partners and encourage them to test. In case of discordant results, the counsellor will facilitate a risk reduction plan
- Obtain referrals for follow-up and ongoing health care including ART, care and support for themselves and their families
- Make informed decisions about future behaviour

The main disadvantage of HIV testing is the mental distress caused by fear of confidentiality breaches, stigma, domestic violence and knowing one's status.

When does HTC occur?

HTC in PMTCT may occur at any stage in the life of a man or women of reproductive health age: before pregnancy, during pregnancy, during labour, postpartum care and child follow-up (Under 5 clinics). HTC should involve not only women but also their partners and families.

4.2 Guiding principles of testing and counselling

The guiding principles of HTC are confidentiality, pre-test information and informed consent, and post-test counselling.

Confidentiality

HIV test results and information that is shared between HCWs and clients during health-related consultations must be confidential. This confidentiality is essential in establishing and maintaining a client's trust. All HCWs and supporting staff at the healthcare facility are responsible for maintaining confidentiality and all should receive training about procedures to carry out this responsibility.

Practice Point

- Healthcare workers should inform clients that personal and medical information, including HIV test results, are private and will not be shared without clients' permission. Clients should also know that although medical information and HIV test results may be provided to other HCWs for the purpose of ensuring that the client receives the appropriate medical care, only those HCWs who are directly involved in the client's care will have access to the client's records, and only on a "need-to-know" basis.
- All medical records and registers should be kept confidential and stored in a safe, private and secure place, whether or not they include HIV-related information.
- In registers used to record client services, registration numbers should be used to identify clients instead of names.
- Critical information that is not recorded should also be kept strictly confidential
- Whenever possible, the same HCW should provide pre-test information and post-test counselling.

Pre-test information and informed consent

Pre-test information in RCH settings focuses on basic information to enable clients to make informed decisions about whether or not to have an HIV test. Informed consent is the process during which each client receives clear and accurate information about HIV testing, including risks and benefits, to ensure that the client understands she/he has the right and the opportunity to opt-out of testing.

When testing is declined

Any client or patient who does not give consent for HTC services shall still be provided with the best possible care, and may not be denied access to other health services. The decision to decline should be noted in the client's medical record so that she can be supported and encouraged to test for HIV at subsequent visits to the health facility.

Practice Point

It is the HCW's responsibility to make certain that the following elements of informed consent are met for every client tested for HIV:

- Ensure the client understands the purpose and benefits of testing, counselling and PMTCT services
- Ensure the client understand the testing and counselling process
- Ensure the client knows she/he may decline testing

Clients should never be pressured or coerced into being tested.

Post-test counselling

A guiding principle of HTC is that all clients should receive post-test counselling regardless of their HIV status. The HIV test result always should be given in person, not otherwise. During the post-test counselling session, the HCW informs clients of their HIV test result, advice and support on follow-up care and treatment based on their HIV status. The HCW may also provide support with disclosure, and support to either stay HIV-negative or prevent further transmission. The post-test counselling session is further described later in this chapter and in *Appendix 4-B: Post-test Counselling Checklists.*

4.3 HTC strategy

Provider-initiated HIV testing

The provider-initiated approach (also known as "routine" or opt-out testing) is the recommended national strategy for HTC in RCH settings. With this approach, HIV testing is offered as a routine part of standard care, and all women receive HTC unless they decline to be tested or, in other words, opt out.

Provider-initiated testing helps make HTC a "normal", routine part of RCH services, including ANC. This approach has been proven to significantly increase the number of women who test for HIV and therefore, who receive PMTCT services. Although this approach varies from past voluntary testing and counselling models in which clients had to explicitly request testing, it still adheres to the guiding principles of HIV testing (confidentiality, pre-test information and informed consent, and post-test counselling).

Table 4.1: Differences and similarities between provider- and client-initiated HTC services

Provider initiated/routine	Client Initiated/VCT
▪ Individual is seeking medical care. ▪ Client receives information about HIV testing in RCH (either in a group or on an individual basis).	▪ Individual chooses to seek HIV counselling and testing. ▪ Client receives information about HIV testing in RCH (either in a group or on an individual basis).

▪ Client is given the opportunity to ask questions and the HCW ensures that the client understands HIV testing in the context of PMTCT. ▪ Unless client opts out, HIV testing is performed.	▪ Client is given the opportunity to ask questions and the HCW ensures that the client understands HIV testing in the context of PMTCT. ▪ Client specifically requests the HIV test and gives verbal or written consent.

Practice Points

- All women of child bearing age, pregnant women and their partners and children, should be encouraged to receive HIV testing and counseling as a routine procedure in RCH services
- Under the routine provider-initiated approach, women of child bearing age whose HIV status is unknown should be provided with information about HIV as a part of normal, routine care in RCH settings and should be given the opportunity to ask questions about this information. HIV testing should then be conducted unless the client opts out.
- Women who are pregnant should be tested at first ANC visit, even if they were previously tested.

Practice Point

- Procedures that make women wait in special queues to be tested for HIV (i.e., procedures that require women to go out of their way or to actively opt into testing) should be avoided.

4.4 Pre-test HIV information

The purposes of pre-test information are to:

- Increase women's knowledge and awareness of HIV.
- Support informed decision-making about HIV testing and PMTCT services.

Pre-test information can be given in any RCH setting: ANC, labour and delivery/maternity wards, during postpartum visits or when a mother/parent/guardian accompanies her child to an Under 5 clinic. It is recommended that HIV pre-test information be given as a group information session. If the client requests, individual pre-test counselling can be provided.

Group pre-test information sessions in ANC

All pregnant women and their partners should participate in a group information session about HIV at their first ANC visit — or as soon as possible thereafter. If a group cannot be convened, this information is provided on an individual basis.

The purpose of this session is to:

- Increase client's knowledge and awareness of HIV and PMTCT
- Support client's informed decision about HIV testing
- Increase client's knowledge about how to prevent HIV
- Help client identify and assess HIV risk behaviours

Practice Point

To help clients learn about HIV and PMTCT services in the group pre-test session:

- Set aside time for questions and answers
- Encourage clients to ask questions
- Mention that individual counselling is available to anyone who has questions that they do not want to ask in the group

During these sessions, HCWs should ask key questions to encourage discussion, provide information, yet be careful to refrain from dominating the session. HCWs should also ensure that all participants have the opportunity to speak and ask questions. Healthcare workers conducting these sessions should have the basic facilitation skills necessary to encourage clients to participate and should be able to cope effectively with any emotional distress that occurs in the group.

Guiding steps in providing HIV pre-test information in the ANC setting

- Assess the clients' knowledge of HIV, AIDS and MTCT
- Discuss the benefits of testing and counselling, focusing on the benefits of testing during ANC
- Provide information about HIV infection in pregnancy and the risk of MTCT
- Discuss the meaning of an HIV positive and HIV negative test result
- Explain when the test results will be available
- Discuss the window period
- Discuss routine repeat HIV testing later in pregnancy
- Discuss the advantages of couple counselling
- Discuss the persons with whom clients should share HIV test results (e.g., partner, previous partners, mother, sister, in-laws etc.)
- Talk about the advantages and possible disadvantages of sharing HIV test results with sexual partners
- Discuss the PMTCT interventions; discuss the care and treatment available for mother, partner(s), and child if the test results are positive
- Discuss infant testing at 6 weeks postpartum
- Provide information about how to prevent HIV infection, including safer sex practices

Information presented in group sessions should be reinforced at subsequent visits. Attendance at group information sessions and post-test counselling should be documented on the appropriate forms.

When clients opt-out of HIV testing

Clients who decline HIV testing should be reassured that this refusal will not affect their access to RCH services. If possible, the HCW should explore the reasons for refusal and address the client's specific questions and concerns. Clients should be informed that, if they change their mind, HIV testing can always be provided during a later visit. The client's decision should be documented as a reminder to offer HTC at future visits. Healthcare workers should not pressure clients to be tested.

4.5 Post-test counselling and support

Individual post-test counselling should be provided to all clients, both those who test HIV positive and those who test HIV negative, as soon as their test results are available. HIV test results should always be given in person and counselling should take place in a private setting, separate from other clients and HCWs. Key post-test-counselling messages according to a client's HIV test result are summarised in *Appendix 4-B: Post-test Counselling Checklists*.

Post-test activities

The following post-test counselling activities should be conducted:

- Ask the client if she has any questions and address them if you can.
- Provide the HIV test result and assess the client's understanding of the meaning of the result.
- Discuss partner HIV testing and the issue of discordance — the fact that her partner's HIV status may be different from her own.
- Explore and encourage disclosure and partner testing, if such disclosure is safe and appropriate.
- Provide HIV risk assessment and agree on an individual risk-reduction plan. Encourage risk-reducing behaviour, including safer sex.
- Provide the appropriate PMTCT essential messages according to the client's HIV status.
- Offer appropriate information and referral according to women's HIV status.
- Encourage and support subsequent ANC visits. These visits provide the opportunity to reinforce key PMTCT messages, provide follow-up counselling and make referrals for HIV treatment, care and support as necessary.
- Remind her that if she tested HIV negative, she will be re-tested in the third trimester and postpartum.

When the client is HIV negative

Post-test counselling provides an opportunity for a client who is uninfected to learn how to remain uninfected. The post-test counselling session also offers an opportunity to encourage all women to breastfeed exclusively for the first six months of life. Women should be informed that, if they become infected during pregnancy or while breastfeeding, they face an increased risk of MTCT. Therefore discuss discordance and partner testing, even when the woman is HIV negative.

Healthcare workers should also discuss family planning and safer sex. Women should be informed of routine, repeat HIV testing in the third trimester, in case the test was conducted during the window period or in the event of incident infection. Mothers should be encouraged to request re-testing after delivery, if they think they may have been at risk.

When the client is HIV-positive

Post-test counselling for women testing HIV positive should include counselling and support to help them accept their test result and cope with emotional reactions on learning they are HIV infected. Pregnant women who test HIV positive and women who already know that they are HIV infected should be provided with information about PMTCT interventions and be encouraged to start taking ART. During counselling sessions, HCWs should:

- Discuss the benefits of lifelong ART for the mother and ARV prophylaxis for the HIV-exposed infant
- Discuss importance of adherence to ARV drugs and need for regular visits to the health facility for follow up.
- Provide infant-feeding education, counselling and support.
- Provide information about the importance of delivering in a health facility where ARV prophylaxis, Standard Precautions and safer obstetric practices are implemented.

Women living with HIV will also require information and counselling on the prevention of HIV transmission, including safer sex practices, and on family planning. They should be supported to disclose their test results to partners, family members and others. All women testing HIV positive should be started on lifelong ART using a single table of fixed dose combination of tenofovir/lamivudine/efavirenz (TDF/3TC/EFV) or alternative combination therapy. They should be encouraged to bring their partners and other children for HIV testing. They should be informed that their exposed children will be followed up at the Under 5 clinic for immunisations, routine care and HIV testing at 6 weeks of age. Conduct clinical staging and draw blood for a baseline CD4 count. Provide appointment or refer to follow-up HIV care and treatment for clients, partners, her children and other family members.
For breastfeeding women who will be identified as HIV positive with infants older than 6 weeks of age, the mother should be offered immediate HIV testing for their infants, according to national algorithm (see Figure 4.2).

4.6 Counselling couples

Couples may have counselling needs different from individuals; and male partner participation in RCH services has been shown to be an important factor in the success and acceptance of PMTCT initiatives. Men have much to offer as fathers, husbands, brothers and sons in assuming a greater role in PMTCT and care and treatment programmes. The support of male partners can encourage women to adhere to PMTCT interventions, including exclusive breastfeeding, and increase compliance to family planning decisions. Couples

counselling is therefore a strategy that is highly recommended and encouraged by the MoHSW. Healthcare workers should support the involvement of men in RCH services by providing and encouraging couples counselling that includes the key HIV and PMTCT counselling messages.

Considerations in counselling couples

In counselling couples, it is important to establish a relationship with each partner. Healthcare workers should pay equal attention to the questions and concerns of each individual in the couple and be careful not to allow one person to dominate the conversation.

- Mention the possibility of discordant results, and prepare them for this possibility.
- Assuming the couple attended the pre-test information session, respond to any questions they may have on HIV and PMTCT. If they did not attend the pre-test session, then provide information on PMTCT interventions.
- Confirm the benefits of knowing one's HIV status; discuss concerns or the possible risk of such knowledge.
- Ask who else might be affected by the test results.
- Confirm the couple's willingness to be tested.
- Allow time for questions and summarise what you have discussed.
- Be prepared to refer the couple for further counselling if indicated.

In order to make couple HTC effective, the counsellor needs to have additional skills and attributes:

- Self-awareness
- Capacity to tolerate intensity
- Ability both to validate and to challenge positively
- Recognition that relationships are full of contradictions
- Understanding relationships in the context of cultural values and norms and dynamics of power and oppression
- Perceptions and concerns about difficulties and challenges of couples HCT

Counselling couples

When counselling couples, HCW should also ensure that both partners agree to:

- Receive their test results together as a condition of couple counselling
- Make decisions about disclosure to other persons together
- Discuss HIV risk concerns together and support one another

Separating couples may imply distrust between the couple, and confidential information from individual counselling sessions will not aid providers when couples are brought back together. Partners

Discordance

Discordance refers to a difference in HIV status, such as when one partner is HIV positive and the other partner is HIV negative.

Clients should be informed that HIV test results can sometimes differ between couples. This is one reason why HTC for couples is so important.

Healthcare workers should let clients know that, even if they are HIV negative, their sex partner could be positive. If infected during pregnancy or while breastfeeding, the risk of MTCT is very high.

should be encouraged to talk equally and openly. Discussion of risk issues should be done using abstract/hypothetical language and focusing on the present and the future.

In some instances, where the HCW has reason to believe that one partner may have been coerced to attend couples counselling or that there may be underlying partner violence, the provider may wish to separate the couple for individual counselling, or may recommend individual counselling and testing.

Provider-assisted mutual disclosure

This occurs when an HCW assists a client with disclosing his or her HIV status to a partner. Provider-assisted mutual disclosure of HIV status is an effective way to facilitate the process of disclosure for persons who may have concerns about doing so themselves. Individuals who attend RCH alone shall be informed of the possibility of discordance, the importance of knowing their partner's HIV status, and the benefits of couple HTC. Clients will be encouraged to bring their partner to an RCH health facility for provider-assisted mutual disclosure where the HCW will provide pre-test information and offer HIV testing for the partner.

Follow-up services for couples

All couples should be linked with appropriate follow-up services based on their HIV test results .Some couples may require on-going counselling support to accept their HIV status and plan how to live positively with HIV as couples.

Provide or refer for counselling and support to keep the HIV uninfected partner negative. There is an increased risk of HIV transmission to the uninfected partner during pregnancy. The increased risk of infection for women during pregnancy may be due to changes in maternal immunity. Men also are more prone to HIV infection during this time; an infected pregnant woman's increased viral load and vaginal shedding of HIV may increase her partner's exposure. With support and uptake of risk-reduction such as correct, consistent condom use and excellent adherence to ART, discordant couples can remain discordant for many years, perhaps forever.

Follow-up services that should be provided to all couples, in particular to discordant couples, include:

- Link partners who are living with HIV to care, treatment and support programmes. Discuss the role of treatment for the HIV-infected partner in reducing the risk of HIV transmission to the uninfected partner.
- Link HIV-uninfected male partners with medical male circumcision programs.
- Assuming the couple had unprotected sex within the past month, retest the HIV-uninfected partner in a discordant relationship for HIV in four weeks. If the uninfected partner is pregnant, she will also be re-tested during the third trimester. The HIV-negative partner should be tested annually and four weeks after a potential exposure has occurred (e.g. unprotected sex). Provide on-going risk reduction counselling and linkage to support groups.
- Provide condom demonstration; offer condoms and explain where to access more condoms.
- Counsel on family planning and provide (or refer for) method of choice.

The MoHSW will strengthen PMTCT programmes and systems to successfully link discordant couples with these follow-up services, and will explicitly establish and/or strengthen data systems to track these linkages and ensure couples enrol in and receive follow-up services.

4.7 Testing and counselling for women of unknown HIV status at the time of labour and delivery

Although it may be difficult to offer pre-test education during labour, HCWs should routinely provide HTC to the following women in the labour ward when it is feasible to do so:

- Women of unknown HIV status
- Women with no record of third trimester HIV testing (who initially tested HIV-negative)

Healthcare workers should use clinical judgment when deciding whether to test a woman during labour or postpartum. Regardless of timing of testing, provide test results as soon as they are available, but the detailed post-test counselling may need to be delayed until after delivery.

Practice Points

- When a woman presents in early labour, provide information about HIV testing and conduct testing unless she declines. If she tests HIV positive, initiate lifelong ART in the mother and ARV prophylaxis for the infant.
- When a woman presents in late labour (active phase), defer testing and counselling until after delivery. After delivery, provide the pre-test session, offer counselling and conduct testing unless she declines. If the result is HIV positive, initiate lifelong ART in the mother and ARV prophylaxis for the infant.
- Women who are provided with the pre-test session and testing during labour should be given their result before delivery whenever possible. The detailed post-test counselling can be delayed until after the infant is born, but before discharge.
- All identified as HIV infected while breastfeeding, should be initiated on lifelong ART immediately, regardless of their CD4 count or clinical stage.

Practice Points

- Neither women nor their infants should be provided with ART or ARV prophylaxis if the mother has either not been tested for HIV or tested and found to be HIV negative.
- All women testing HIV negative, should be re-tested 3 months after the initial test.

4.8 Counselling pregnant women with special needs

Some women are more vulnerable to becoming HIV infected. Adolescents, house servants, substance users and sex workers are at greater risk of becoming HIV infected than women in the general population. In addition to providing standard pre-test information and post-test

counselling, the individual post-test counselling should address the special needs of the vulnerable client. In counselling these women, the HCW should:

- Assess risk and provide counselling to agree on a risk-reduction strategy appropriate to her situation
- Where it might be impossible to avoid risky situations, counsel on harm reduction, e.g., support sex workers to use condoms with every client, counsel injecting drug users to either administer orally or inject safely, etc
- Explore support systems and provide appropriate referrals
- Refer adolescents to youth support groups or nongovernmental organizations (NGOs) that provide youth-friendly sexual and reproductive health services.

Women who are substance users should be referred to drug rehabilitation programmes and appropriate NGOs. Women who are sex workers should be referred to NGOs for alternative income-generating activities.

4.9 Pre-test information and post-test counselling for infants and children

An HIV-positive diagnosis in an infant or child can be distressing for parents. Support for parents or caregivers (hereafter referred collectively as "caregivers"), which should ideally have begun in ANC, includes explaining the process of infant/child HIV testing, explaining the mechanisms in place to assure confidentiality, discussing the diagnosis compassionately and providing appropriate referrals and support.

Pre-test information

It is the responsibility of the HCW to ensure that caregivers understand the infant testing process, the meaning of test results and the benefits of follow-up for final determination of HIV status. Before testing an infant or child, the HCW should:

- Review basic information (as needed) with the caregivers about MTCT and interventions to reduce the risk of MTCT
- Discuss the benefits of determining the child's HIV status
- Discuss confidentiality
- Explain the testing procedure (sample collection, transportation and when results will be available)
- Review the meaning of positive or negative results, given the child's age and how he/she is being fed
- Emphasise the importance of follow-up, CPT and ARV prophylaxis
- Discuss the availability of HIV care and treatment should the infant test positive
- Assess the caregiver's understanding of the information provided

Post-test counselling

Counselling is essential after test results have become available, regardless of the result:

- Always meet with the caregiver as soon as possible
- Before speaking to the caregiver, review the infant's medical notes, focusing on those from the pre-test session
- Find a private room where you will not be disturbed
- Provide the result and allow the client to express emotion
- Allow for silence; time may be needed to absorb bad news
- For HIV-exposed infants, the content of counselling is influenced by the infant's age and whether s/he is breastfeeding

The key discussion points of the post-test counselling session, regardless of test results are:

- Provide the test result
- Explain the meaning of the result
- Discuss infant CPT, as appropriate to the situation. Discuss completion of infant ARV prophylaxis at 6 weeks of age.
- Discuss the care and treatment needs of the mother, including maternal ART and CPT (if indicated).
- Ask how infant feeding (breastfeeding or formula feeding) is going, provide support, and discourage mixed feeding.
- Assess the caregiver's support system, identifying potential sources of social support, referring and providing support
- Discuss the need for any follow-up or confirmatory testing (based on test results, child's age and infant feeding method) following infant testing guidelines; discuss other post-test follow-up needs of the child and family
- Discuss and arrange follow-up care for the infant
- Assess the caregiver's understanding of the information provided
- Pay attention to the caregiver's ability to process and cope with the information provided

4.10 Referrals

Referrals for community services and support are an important part of HIV post-test counselling for women living with HIV. Healthcare workers should actively work to ensure that all RCH services, including PMTCT interventions, are part of the existing network of HIV-related prevention, care, treatment and support to build and maintain strong referral systems.

HCWs should be familiar with additional follow-up services available in their communities that might be needed by their pregnant clients diagnosed with HIV. They should work with the counselling coordinator to develop and regularly update a directory of relevant HIV services in their area. When a referral is needed, HCWs should confirm that the client agrees to the referral and understands the necessity of the suggested service. Clients should be given the location, time, contact name and agency to which they are being referred.

4.11 Overview of HIV testing

There are two types of tests used for diagnosing HIV infection:

- Antibody-detecting tests
- Antigen-detecting tests (p24) and virological DNA/RNA tests

Antibody-detecting tests

HIV antibody tests detect HIV antibodies (not the HIV virus) as an indirect measure of infection. Typically, a person makes antibodies 3 to 6 weeks after infection, but occasionally it can take as long as 3 months. The time between infection and testing HIV positive is referred to as the "window period."

Rapid HIV antibody tests

Rapid HIV tests are antibody tests that use a specimen of whole blood, plasma or serum, usually collected from a fingerprick or venipuncture. Rapid HIV tests give accurate results in less than 30 minutes, are highly accurate when performed properly and do not require special equipment or laboratory-trained staff.

It is recommended that the diagnosis of HIV infection in adults be established by detecting HIV antibodies using simple rapid tests according to the national HIV rapid testing algorithm (see Figure 4.1).

ELISA (enzyme-linked immunosorbent assay) antibody tests

ELISA tests are antibody tests that are used in laboratories for confirmation of discordant HIV test results when results from rapid tests are inconclusive. ELISA tests are highly sensitive, very specific and reliable.

ELISA testing must be conducted in a laboratory where there is electricity and highly skilled laboratory personnel. It can take several hours or even days to obtain results. For these reasons, rapid tests are more economical and practical to use in RCH settings.

Antigen and virological tests

Virologic, or antigen, tests detect the presence of HIV in the blood instead of detecting the presence of HIV antibodies. Examples of viral tests include HIV deoxyribonucleic acid-polymerase chain reaction (DNA-PCR), ribonucleic acid-polymerase chain reaction (RNA-PCR), and the p24 antigen tests (the latter is not used widely in Tanzania). RCH facilities which have access to viral testing should use the tests when available and appropriate. Use of DBS collection and transport system can further improve access to and utilization of virologic testing.

Practice Points

- Rapid HIV tests are recommended for diagnosis of HIV infection in anyone over the age of 18 months receiving care in RCH settings, this includes pregnant women in ANC settings. The rapid HIV test is recommended because of its accuracy, speed, cost effectiveness and acceptability.
- Virological tests are used to diagnose HIV infection in infants and children under the age of 18 months.

4.12 National recommendations for HIV testing in PMTCT programmes

HIV testing procedures

HIV tests should be performed by trained HCWs or laboratory technicians who know how to interpret results and understand the testing procedure, including how to correctly dispose of all testing materials.

When conducting HIV testing, HCWs should follow infection control procedures and Universal Precautions. Use proper specimen collection procedures, including quality phlebotomy techniques; label all samples carefully and accurately. Conduct tests according to test kit instructions and take special care to avoid the contamination of testing reagents. Record all HIV tests results on the Mother's Health Card and on the appropriate PMTCT programme registers.

National algorithm for serial HIV testing

A testing algorithm describes the number, type and order of tests that need to be performed. The first test conducted is highly sensitive, and the second test is highly specific. All HIV testing facilities in Tanzania, whether public or private, must adhere to nationally approved HIV testing algorithms.

In Tanzania, the nationally approved HIV rapid testing algorithm utilizes a 'serial' testing strategy. That is, a blood sample is tested with one HIV test kit first, and a second test kit is used only when the first HIV test kit reveals an HIV-positive test result. The actual tests used in the nationally approved HIV testing algorithm may change from time to time, based on the availability of new technologies and assessment of existing technologies.

Assessments of the HIV rapid testing technology are performed annually and the national testing algorithm updated based on the results of the assessments.

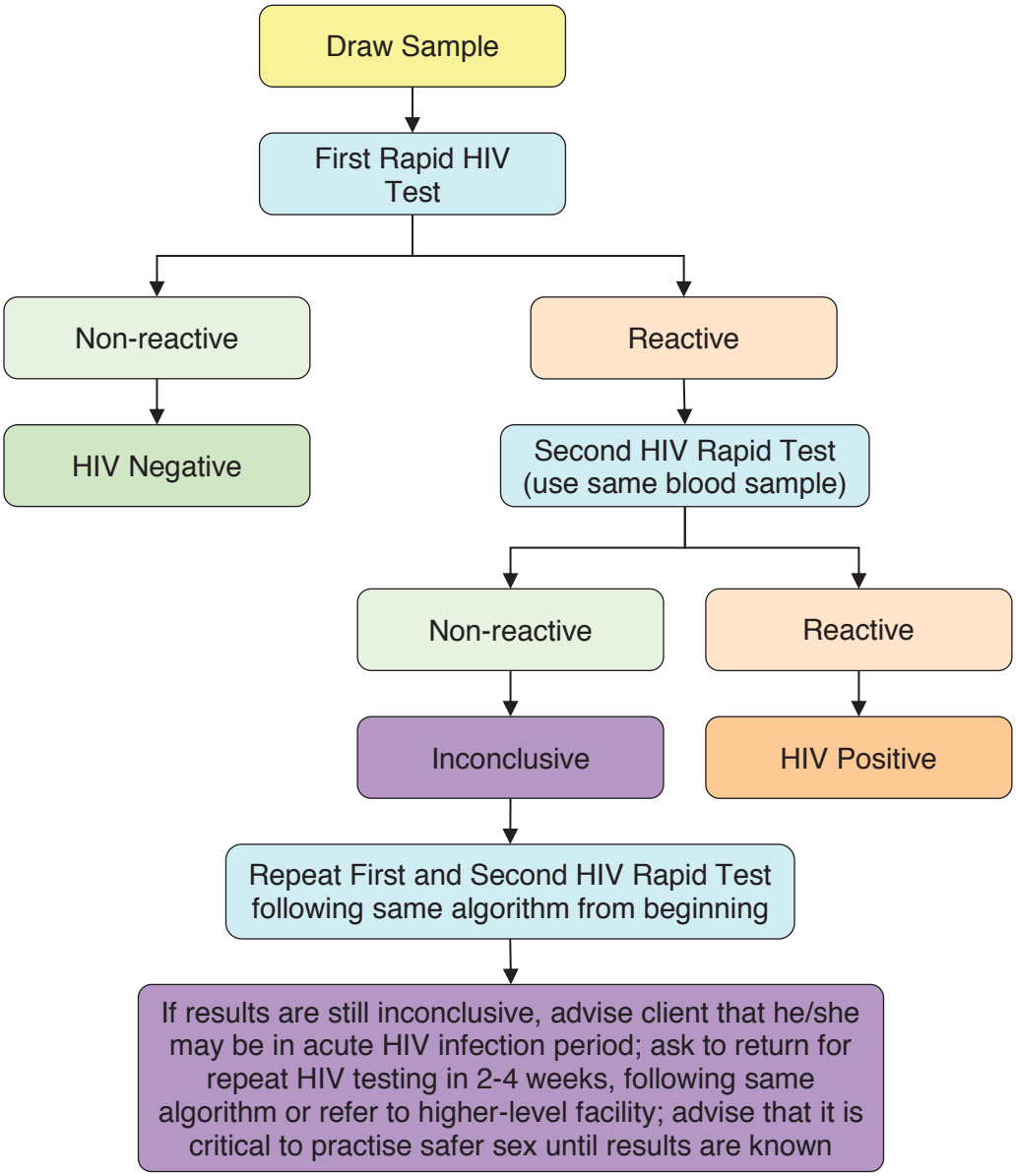
The current national HIV rapid testing algorithm (for adults and children 18 months of age and older) appears in Figure 4.1, below.

4.13 Laboratory diagnosis of HIV infection in children

All infants born to women living with HIV have passively acquired antibodies, which can persist until 9 to 18 months of age. These passively transferred maternal HIV antibodies make interpretation of positive ***antibody*** tests difficult in children less than 18 months of age. In order to diagnose HIV infection in children less than 18 months of age, assays that detect the virus or its components (i.e. virologic tests) are required. The most commonly used tests are DNA-PCR or RNA-PCR tests. In general, each test has advantages and disadvantages. However, DNA-PCR is considered the gold standard and is the preferred test for diagnosing HIV infection in infants and children less than 18 months of age. In children 18 months of age or older, HIV antibody tests, (either rapid tests or ELISA or a combination of both), can be reliably used to definitively diagnose HIV infection in the same manner as they are used in adults.

Blood collected on filter paper as dried blood spots (DBS) offer an easy way to obtain blood in infants and young children; collection of specimen is less traumatic than venepuncture and uses only a small volume of blood. Specimens for DBS can be obtained by using blood from a heel-prick in infants or a finger-stick in older children, it carries less biohazard risk than liquid samples, can be stored at room temperature making them easier to transport to central sites for testing. HCWs can be trained to collect specimens for DBS testing for early infant diagnosis and only when trained should they be permitted to carry out DBS collections. DBS specimens can be collected at any time and stored at the health facility until it can be delivered to the testing laboratory.

Figure 4.1: Tanzania national HIV rapid testing algorithm for persons aged greater than 18 months



Types and use of HIV tests for infants and children

The HIV tests used for infants and children are summarised in Table 4.2.

Table 4.2: Use of HIV tests in infants and children

Test	Use for <18 months	Use for >18 months
Rapid antibody test	Determine if infant is HIV-exposed.	Determine if child is HIV-infected.
DNA-PCR	Determine if HIV-exposed infant is HIV-infected.	Not used for this age group.

In general, maternal HIV antibodies remain detectable throughout the first 6 months of life but levels decay significantly by 9–18 months of age, and become undetectable in most uninfected children by 18 months of age. DNA-PCR testing is recommended in children less than 18 months, as the child may still be carrying maternal antibody. However rapid antibody testing should be used as a screening test to rule out infection in infants 9–18 months.

Children less than 18 months of age who are negative by antibody tests are considered HIV negative and do not need testing by DNA-PCR.

Assessing HIV exposure and infection in infants and children

HIV DNA-PRC and RNA-PCR testing can detect infection in infants within the first few days of life especially for infants infected during pregnancy, however the sensitivity and specificity of most DNA-PCR tests increases by 4 weeks of age.

Any HIV-exposed infant symptomatic soon after birth is at risk for rapid disease progression and death. In *symptomatic infants*, conduct DNA-PCR testing as soon as possible, even within the first few days of life. In *non-symptomatic infants*, routine testing should be conducted at 4–6 weeks of age or as soon as possible thereafter. If negative, re-test:

- If the child shows signs/symptoms of HIV infection and
- Six weeks (or more) after complete cessation of breastfeeding.
- At 18 months of age

Most infants in Tanzania are breastfed for two years or longer. Because breastfeeding poses an on-going risk of mother to child transmission, a negative DNA-PCR in an HIV-exposed infant who is breastfeeding does not rule out HIV infection, as the infant may have been recently infected and, as such, in the window period. Nonetheless, assure parents to continue exclusive breastfeeding for the first six months of life, as early cessation of breastfeeding is associated with higher morbidity and mortality than continued breastfeeding even in the presence of HIV infection (see *Chapter 6: Infant Feeding in the Context of HIV Infection*). Continue CPT for the HIV-exposed breastfed infant until HIV infection can be ruled out. Emphasize the need for follow-up.

Initiation of ART should be done while waiting for test results if the infant meets presumptive diagnosis criteria (See *Chapter 7: Comprehensive Care and Support for Mothers, Babies and Family Members living with HIV* for more detailed information).

There are numerous potential venues for identification and follow up of HIV-exposed and infected infants. Every effort should be made to offer infant/child HIV testing to the following patient groups:

- Infants/children admitted to paediatric wards
- Infants/children attending outpatient department
- Infants/children attending TB clinics
- Infants/children whose mothers/fathers are attending Care and Treatment Clinic (CTC)
- Infants/children attending routine immunization and check-up visits
- Infants/children born to mothers with unknown HIV status or whose mothers are unknown, e.g. abandoned children

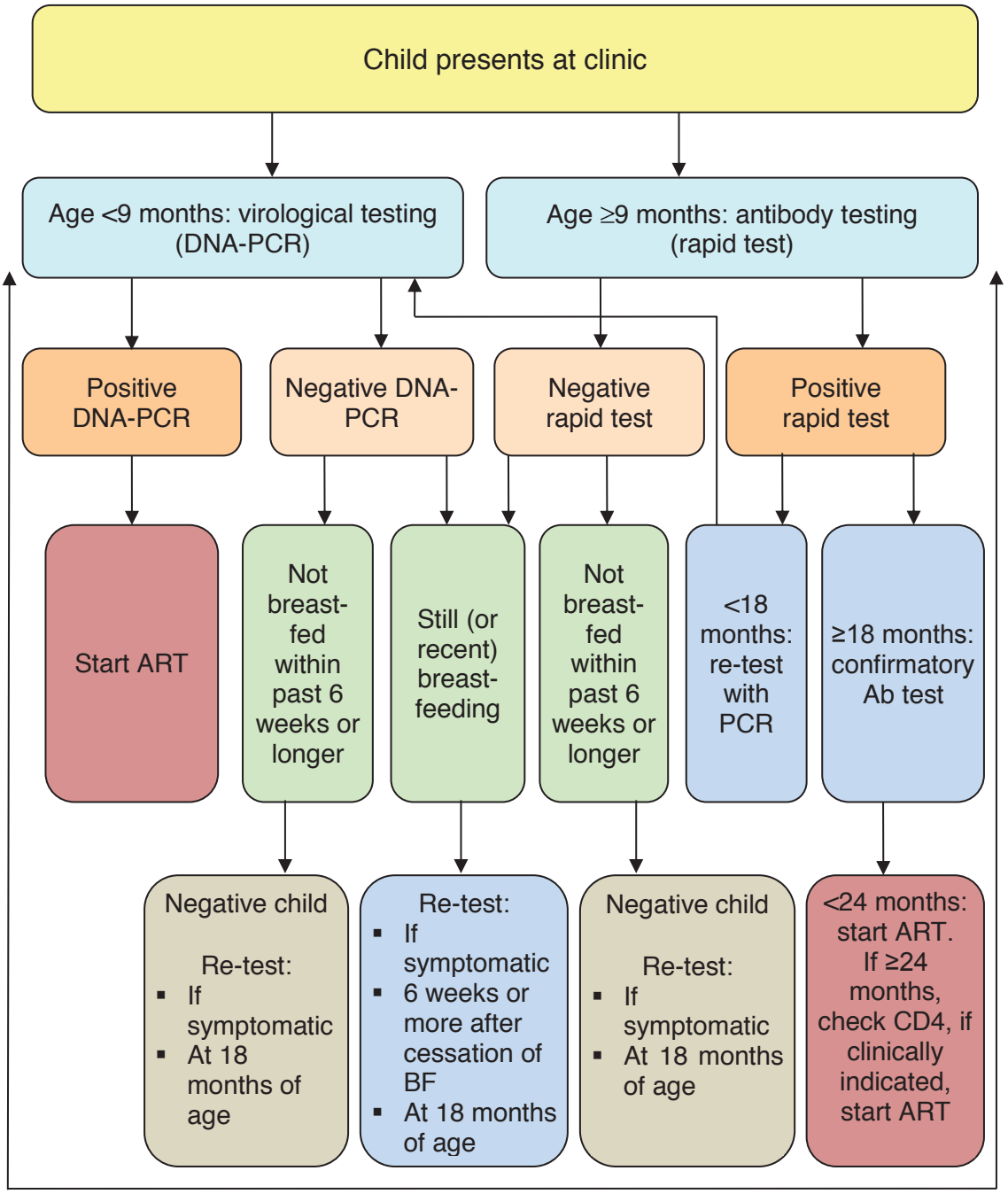
The following table summarises the recommended testing approach and timeline for HIV-exposed children and children of unknown exposure status.

Table 4.3: Recommended HIV testing approaches for infants and children

Category	Test required	Purpose	Action
Known HIV-exposed infant (e.g. mother enrolled in PMTCT program)	Routine DNA-PCR testing at 4–6 weeks or as soon as possible thereafter	To diagnose HIV infection	If positive, enrol at CTC/start ART
Infant or child less than 18 months — unknown HIV exposure	▪ HIV antibody testing of mother ▪ HIV antibody testing of infant if maternal status unknown	To diagnose HIV infection in mother and HIV exposure in infant	DNA-PCR testing of infant if either mother or infant is HIV antibody positive
Child over 18 months — unknown HIV status	HIV antibody testing	To diagnose HIV infection	If positive, enrol at CTC/start ART if eligible
Infant or child with signs and symptoms suggestive of HIV — unknown HIV status	HIV antibody testing	To diagnose HIV infection or HIV exposure	▪ If antibody positive and <18 months, do DNA-PCR testing. ▪ If antibody positive and >18 months, enrol at CTC/start ART if eligible
Infant or child who has stopped breastfeeding for >6 weeks	HIV antibody testing	To diagnose HIV infection or HIV exposure	▪ If antibody positive and <18 months, do DNA-PCR testing. ▪ If antibody positive and >18 months, enrol at CTC/start ART if eligible.

Figure 4.2 describes the decision process and interpretation of results for HIV antibody and HIV DNA-PCR tests, depending on the age of the child.

Figure 4.2: Diagnosis of HIV Infection in infants and young children less than 18 months of age



Practice Points

Every HIV-exposed infant should be tested for HIV at:

- 4-6 weeks of age or as soon as possible thereafter
- At least 6 weeks after complete cessation of breastfeeding
- If the child shows signs and symptoms suggestive of HIV infection
- At 18 months of age

Practice Point

RCH clinics, including Under 5 clinics, are settings where most PMTCT interventions are implemented. Linkages between RCH and other healthcare settings (especially paediatric wards, out-patient clinics, TB clinics, and CTCs) should be strengthened to ensure implementation of early infant diagnosis and follow-up.

4.14 Collection, storage, transportation and returning results of dried blood spots for DNA-PCR

Dried blood spot (DBS) specimens should be obtained only by persons who have been appropriately trained in the procedure (from taking the sample to drying and packaging the dried specimens) and in universal safety precautions. Blood can be collected at any time and the DBS samples stored until it can be delivered to the referring or testing laboratory.

DBS collection, drying and packaging

Correctly complete the laboratory requisition form and collect, dry and package the blood sample according to standard operational procedure. See *Appendix 4-C: How to Collect Dried Blood Spot (DBS) Specimens for Infant Testing* for the step-by-step process of collecting, drying and packaging DBS samples.

Transportation of specimens to the laboratory

Transportation of DBS specimens from lower level facilities/collection points to district/regional laboratories and return of DBS results from laboratory to regional/district and health facility is shown in Figure 4.4 below.

Sample testing at Zonal Laboratory

Samples received at the PCR zonal laboratory should be tested and results sent back to the health facility within seven (7) days by following the standard testing procedures (first in/first out) to reduce the turnaround time.

Returning results and infant follow-up systems

Before any result is issued, the result must be verified by a PCR Technologist and should be signed by both tester and verifier.

A data clerk should enter the PCR results into the zonal database, document results in the PCR results delivery log to include number of results to be sent and date. Results can be sent back to health facilities using short message services (SMS) printer.

Printouts sent to district/regional hospitals for distribution to health facilities without SMS printers should be documented at the district/regional hospital and sent to respective health facilities the same day. SMS printed results should never replace hard copy results. The laboratory should always ensure that hard copy results are sent to facilities even after sending the SMS.

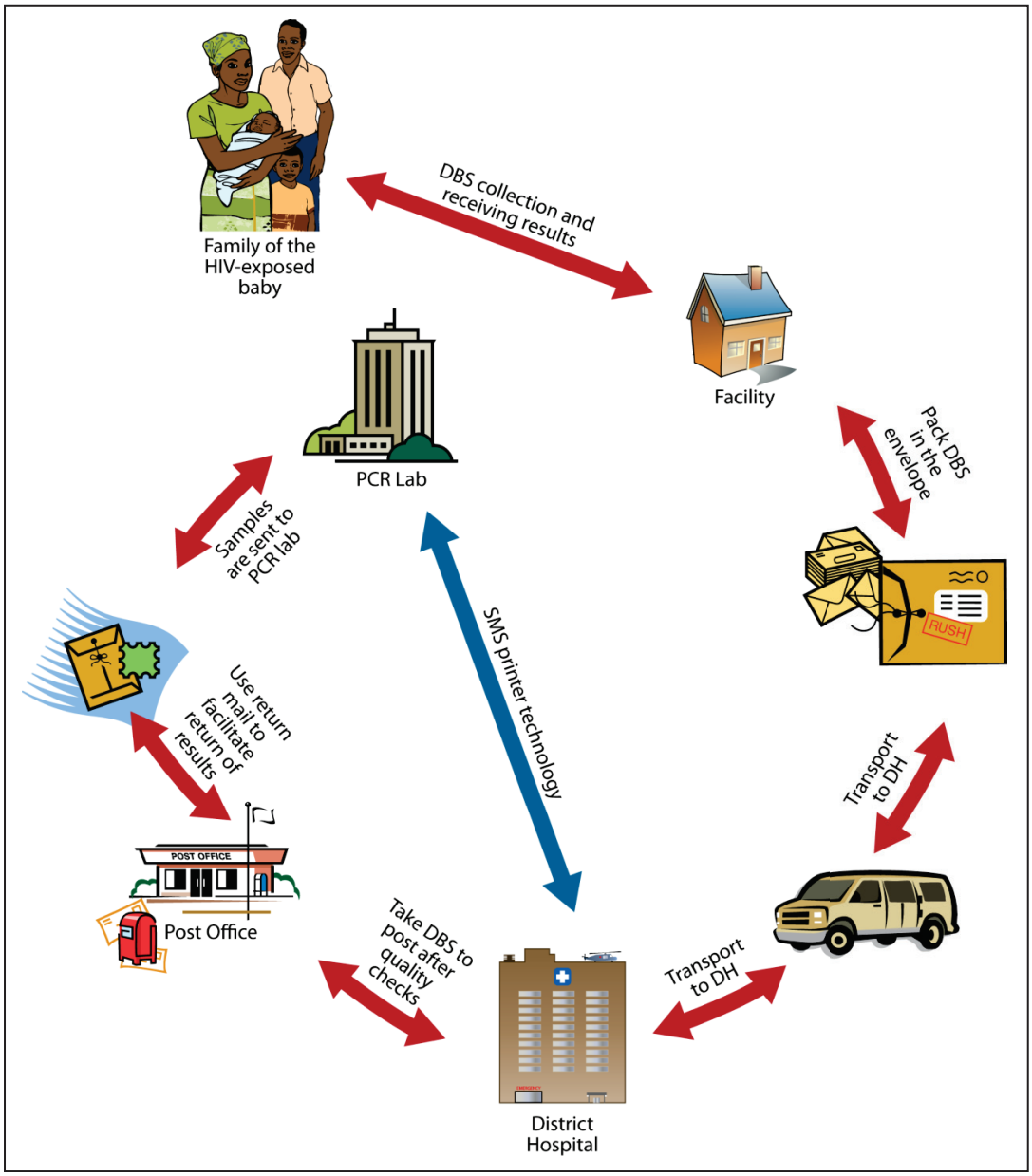
Health facilities must have a strategy in place to ensure efficient return of results to the caregiver. Such strategies might include home visits, phone calls or text messages to caregivers to invite them to return to the health facility for post-test counselling. Remember, the phone call or text is to ***invite*** the client back to the health facility, never to communicate results, which are always given in person. It is important that caregivers of infants testing HIV positive are provided with post-test counselling as soon as possible to enable prompt initiation of ART and linkage to HIV care and treatment services.

HIV-exposed infants should be discharged from care only after final determination of HIV infection status. This means the majority of infants will have to be followed up until 18 months of age. Clinics need to develop protocols to support parents to bring their children to the under 5 clinic according to the schedule, identify those who do not return, and bring patients who miss appointments back to the clinic. To do so, each site should:

- Keep a Mother/Child follow-up register that contains information of all interventions offered including maternal and infant regimens, CPT, results of PCR testing and information for tracking missed visits.
- Keep an appointment system. Emphasizing the importance of return visits can improve adherence to care.
- Monitor appointment attendance: Identify clients who miss appointments and follow-up. Engage community health workers (CHWs), NGOs and peer educators to track families. When possible, HCWs and CHWs should make phone calls to patients or home visits.
- Follow up missed appointments or missed opportunities for testing: For a child with a positive DNA-PCR test result who has not returned to the clinic, every effort should be made to track the family and bring them to the clinic. For a child who missed the opportunity for testing at 4–6 weeks, efforts should be made to track the child and offer testing during subsequent immunization visits.

Please refer to *Chapter 7: Comprehensive Care and Support for Mothers, Babies and Family Members living with HIV* for more information about follow up systems.

Figure 4.4: Transportation processes of DBS specimens



More information on logistics and information management of DBS collection and reporting is available in *Chapter 9: PMTCT Programme Management, Monitoring, Evaluation and Supply Chain Management*.

4.15 Quality Assurance and Control in HIV Testing

Ensuring quality

A sound quality assurance program supports HCWs to carry out HIV testing correctly and professionally. Quality checks should be part of any test procedure to ensure that HCWs' results are always reliable. As a rule, a HCW should not issue results if quality control measures have not been taken.

Quality assurance

Quality assurance consists of the planned and systematic activities put in place to provide confidence that requirements for quality are met. Examples of quality assurance activities include:

- Establishing standard procedures for specimen collection, storage, transportation, testing, recording
- Defining criteria for acceptable specimens or specimen rejection
- Conducting client exit interviews (e.g., customer satisfaction)

Quality control

Quality control refers to the operational techniques and activities used to fulfil requirements for quality (e.g., incorporating known quality control specimens in the run to validate test results). Quality control, therefore, is part of quality assurance.

Quality assurance measures at testing sites: HIV rapid test assays

- Conduct testing according to the manufacturer's instructions as detailed in the test protocol included in the kit. Always follow relevant national algorithms and standard operating procedures.
- Do not use test kit beyond expiry date.
- Record test results immediately after testing.
- Testing should be done according to national testing algorithm.
- Laboratory technicians at healthcare facilities offering HIV testing have supervisory roles in all matters relating to HIV testing at ANC clinics. They are responsible for monitoring HIV testing at the facility and conducting quality assurance exercises locally per *National HIV Quality Assurance Guidelines* (e.g., re-test every tenth specimen and all indeterminate specimens in the laboratory and conducting proficiency testing). Results of all of quality assurance testing should be documented.
- A checklist for supportive supervision should be developed and used to supervise testing.
- If poor performance is reported, the laboratory technicians at the healthcare facility should recommend remedial measures including retraining or changing staff when necessary.

Quality assurance measures at laboratory: HIV DNA-PCR assays

- Conduct testing according to the manufacturer's instructions as detailed in the test protocol included in the kit. Always follow relevant national algorithms and standard operating procedures when collecting, storing and transporting DBS specimens.
- Do not use test kit beyond expiry date.
- Record test results immediately after testing.
- Testing must be done by laboratory technicians trained on HIV DNA-PCR techniques.
- The laboratory manager at healthcare facilities offering HIV DNA-PCR tests should have supervisory roles in all matters relating to HIV DNA-PCR testing. He or she should monitor the performance of HIV DNA-PCR testing at the facility and conduct quality

assurance exercises locally per *National HIV Quality Assurance Guidelines* (e.g., re-test 15% to 18% of previously tested specimens and all indeterminate specimens in the laboratory and conducting proficiency testing). Results of all quality assurance tests should be documented.

- Service maintenance of equipment should be done according to manufacturer's instructions.
- A checklist for supportive supervision should be developed and used to supervise testing. If poor performance is reported, the persons in charge of the laboratory should recommend remedial measures including retraining or changing staff when necessary.

General procedure for HIV testing

HIV tests should be performed by trained HCWs or laboratory technicians who:

- Follow infection prevention procedures and Universal Precautions.
- Practise proper specimen collection using quality phlebotomy technique for blood draws.
- Label specimens carefully and accurately.
- Conduct tests according to manufacturer's instructions.
- Avoid contamination of test reagents.
- Practise proper record-keeping, recording all HIV tests results on the Mother's Health Card and on the appropriate PMTCT program registers using agreed abbreviations (PMTCT 1 for reactive tests and PMTCT 2 for nonreactive tests).

CHAPTER 5: Specific Interventions to Prevent MTCT

5.1 PMTCT services in the ANC setting

Antenatal care improves the general health and well-being of mothers and their infants, the ANC setting is an important source of healthcare for women of childbearing age. Given the high prevalence of HIV infection in Tanzania, all pregnant women should be considered at risk of acquiring HIV infection. By integrating PMTCT services into essential ANC services, national healthcare programmes improve care and pregnancy outcomes for all clients.

ANC for women living with HIV includes the same basic services provided for all pregnant women. However, obstetric and medical care should be expanded to address the specific needs of women living with HIV. The essential package of ANC services for women living with HIV infection is shown in Table 5.1. See *Chapter 7: Care and support of HIV-exposed and HIV infected infants and children* for additional information about these specific services.

Practice Point

Pregnant women living with HIV should attend ANC clinic every month to support adherence to medications and to ensure close follow-up and monitoring

Table 5.1: Essential package of Integrated ANC services for pregnant women living with HIV infection

Client and family history	Collect routine information as guided by the Tanzania obstetric record, including medical, surgical, obstetric, and family planning.
Physical examination	Include visual and hands-on examination to assess for current signs or symptoms of illness including HIV, TB, malaria, cancer of the cervix and STIs.
Laboratory testing	Conduct routine tests and HIV-specific laboratory tests: ▪ Syphilis ▪ Confirmatory HIV testing (if indicated) ▪ Urinalysis ▪ Full Blood Picture (FBP) ▪ CD4 cell count ▪ Liver and renal function tests
HIV staging	Conduct clinical and immunological staging according to WHO clinical staging system.

Antiretroviral treatment (ART)	Provide life-long ART to all HIV positive pregnant women regardless of CD4 count, WHO clinical stage or gestational age. If ART is not available at the facility, refer to CTC but continue to follow at ANC during pregnancy and the postpartum period.
Tuberculosis (TB)	Screen for signs and symptoms of TB disease at every visit. Evaluate for TB disease if symptomatic.
Opportunistic infection (OI) prophylaxis	Prescribe cotrimoxazole preventative therapy (CPT), regardless of WHO clinical stage or CD4 cell count.
Malaria	Support and monitor adherence to CPT. Women on CPT do not need sulfadoxine-pyrimethamine prophylaxis for malaria. Identify acute cases of malaria; treat promptly according to national guidelines.
STI prevention and treatment	Assess risk, diagnose and treat STIs according to national guidelines. Counsel on preventing STIs. Always recommend condom use during pregnancy and lactation.
Adherence to ART	Provide counselling and education on healthy pregnancy, HIV care and treatment and PMTCT. ▪ Ensure accurate knowledge of maternal ART and infant antiretroviral (ARV) prophylaxis (schedule, dosing etc.). ▪ Ensure knowledge and understanding of the rationale for ART and infant ARV prophylaxis and the risks of non-adherence.
Nutrition	Conduct nutritional and dietary assessment and provide counseling. Give iron, foliate, and multivitamin supplements according to national guidelines.
Delivery at a health facility	Explain that interventions for PMTCT — including the provision of ARVs to the mother and infant — are critical during the labour and delivery period. Explain that infant prophylaxis is most effective when initiated as soon as possible (preferably within 6 – 12 hours) after delivery. Infants who have not received ARV prophylaxis soon after birth are at higher risk of HIV infection.
Tetanus toxoid	Administer immunisation according to national guidelines.
Infant feeding	Support the mother to breastfeed exclusively for the first 6 months, followed by the introduction of complementary feeding with continued breastfeeding until 12 months of age. At 12 months of age, encourage cessation of breast feeding over the course of about one month.
HIV-exposed infant	Educate about infant ARV prophylaxis. <u>All</u> HIV-exposed infants should receive ARV prophylaxis from birth or as soon as possible thereafter up to 6 weeks of age. Inform about infant HIV testing and emphasize the importance of early diagnostic testing. ▪ All HIV-exposed infants should be tested for HIV infection at 4 – 6

	weeks of age and re-tested 6 weeks after complete cessation of breastfeeding. ▪ HIV testing should also be performed to exposed infants and children six weeks after complete cessation of breast feeding. ▪ Explain that all infants should initiate CPT at the age of 6 weeks. This should continue until HIV infection has been ruled out and the infant is no longer at risk (is no longer breastfeeding).
Safe Motherhood	Instruct her to return to the clinic/hospital immediately if she experiences symptoms of pregnancy complication such as bleeding, fever, signs and symptoms of pre-eclampsia, severe pallor or abdominal pain.
Signs or symptoms related to HIV	Provide information and instructions on seeking health care for symptoms of HIV disease progression, such as frequent and recurrent illnesses, chronic persistent diarrhoea, oral and oesophageal candidiasis, fever, severe weight loss or signs of any opportunistic infection. Refer women to a CTC when appropriate.
Psychological and social support	Assess and address needs for psychological and social support. Refer to community-based psychosocial support networks or organisations where available. Encourage partners to undergo testing and counsel them on disclosure. Assess need to test other children in the family, even if they are asymptomatic.
Effective family planning and safer sex	Counsel about consistent use of condoms during pregnancy, as well as throughout the breastfeeding period to avoid new HIV infection, re-infection and further transmission. Include long-term family planning with partner involvement when possible. Discuss dual protection (dual protection refers to the use of condoms in addition to the chosen method of contraception).

5.2 ART for PMTCT

ARV medications improve maternal health by reducing related morbidities, which in turn improve survival chances of their babies. ARV medications decrease HIV viral load in the mother, which reduces an infant's exposure to HIV. ARV medications also provide protection for the infant during and after exposure to HIV, including during breastfeeding. ART also reduces the risk of transmitting HIV infection to an uninfected partner.

ART: Life-long use of ARV medications to treat maternal HIV infection in order to improve health and slow disease progression. ART also reduces HIV transmission from mother to infant.

ARV prophylaxis for infant: Short-term use of ARV medications in HIV-exposed infants to *reduce HIV transmission* from mother to infant.

- ART does not cure HIV: ARV medicines cannot cure HIV infection or eliminate it from the body. Instead, they stop HIV from replicating (reducing viral load) which slows the destruction of the immune system and helps the immune system to recover. If ART is stopped, HIV disease progression occurs more rapidly.

- Effective ART regimens include a combination of at least three ARV medications from two different classes of ARV medication. Tanzania's first-line ART contains three drugs from two different classes of ARV in a single combination pill.
- ARV medications must be taken every day. If not taken consistently, ART will not be effective in controlling HIV infection. It is important to keep an effective concentration of ARVs in the patient's bloodstream. Low drug concentrations in the blood allow HIV to mutate, and these mutations can make the virus resistant to ARV medications. When resistance develops, ARVs do not work well to fight the virus.
- Other medications may interact with ARV medicines. Clients should avoid the use of other medications that could reduce the concentration of ARVs in the blood. Healthcare workers should closely monitor all traditional and non-traditional medications taken by clients for possible interactions.

Practice Point

ART is effective for treating HIV infection in the pregnant or breastfeeding woman, reducing the risk of transmission to an uninfected partner, and reducing the risk of MTCT. ART does not cure HIV. HIV infection requires life-long treatment with ART.

ART during pregnancy and during breastfeeding

Pregnant or breastfeeding women with HIV should be started on life-long ART for their own health. The recommended first line regimen is a once-a-day fixed dose regimen of Tenofovir (TDF) + Lamivudine (3TC) + Efavirenz (EFV).

Women who are diagnosed with HIV during pregnancy or breastfeeding should start treatment with TDF/3TC/EFV as soon as possible, when the woman is ready.

Infants born to women with HIV should be started on a once daily regimen of Nevirapine (NVP) prophylaxis from birth or as soon as possible thereafter (preferably within 6 to 12 hours of birth) until 6 weeks of age, regardless of mode of infant feeding.

See *Appendix 5-A: Algorithm for ARV Treatment and ARV Prophylaxis* for a summary algorithm on treating pregnant women and preventing HIV infection in infants with ARV medications.

Eligibility criteria for ART in Women

- All HIV positive pregnant women regardless of CD4 count, WHO clinical stage or gestational age should start life-long ART as soon as they are diagnosed.
- All HIV positive breastfeeding women regardless of CD4 count or WHO clinical stage should start life-long ART as soon as they are diagnosed.
- Women who become pregnant on ART should switch their ART regiment to TDF/3TC/EFV.
- Women who are not pregnant or breastfeeding should initiate ART when their CD4 cell count is ≤350 cells/mm3 (regardless of WHO clinical stage) OR if classified as WHO clinical stage 3 or 4 (regardless of CD4 count).

When to start ARV treatment during pregnancy

Pregnant or breastfeeding women with HIV should start ART as soon as diagnosed. ART should continue for life.

5.3 Evaluation at the time of initiation of ART

Initial laboratory testing

When a pregnant or breastfeeding woman tests positive for HIV, she should be offered life-long ART. Conduct the following laboratory tests:

- CD4 count
- Full blood picture
- Renal and liver function tests

CD4 cells progressively decrease as HIV disease advances and immune status deteriorates. Measurement of CD4 count is an important immunologic marker of disease progression. CD4 count generally improves with effective ART; improvement is therefore a marker of successful treatment. In adults and adolescents, CD4 counts are reported in absolute numbers, while in children less than six years of age, CD4 are also reported in per cent (%).

Capacity for measuring CD4 count has been established at all zonal, regional and district hospital laboratories. However, equipment to measure CD4% is currently only available at all zonal and some regional hospital laboratories.

Practice Point

Successful antiretroviral therapy results in immune recovery and therefore an increase in the number of CD4 cells. National guidelines recommend CD4 testing at ART initiation and every six months thereafter in order to monitor the immunologic response to ART.

WHO Clinical Staging

The World Health Organization (WHO) developed case definitions for HIV surveillance and clinical staging and immunological classification of HIV-related disease in adults and children. Clinical staging is used to guide decisions on when to start cotrimoxazole prophylaxis and when to start ART in non-pregnant individuals and to monitor the effectiveness of treatment in persons on ART. Ideally, the clinical stage should remain stable in an individual on ART.

In the WHO clinical staging system, patients are assigned to a particular stage when they demonstrate at least one clinical condition in that stage's criteria. Patients remain at a higher stage after they recover from the clinical condition which placed them in that stage.

Practice Point

Deterioration (worsening) of the clinical stage may be a sign of treatment failure and should be evaluated at CTC.

For a full description of each stage, see *Appendix 5-B: WHO Clinical Staging of HIV and AIDS for Adults and Adolescents with Confirmed HIV Infection*.

Table 5.2: WHO Clinical Staging

HIV Associated Symptoms	WHO Clinical Stage
Asymptomatic	1
Mild symptoms	2
Advanced symptoms	3
Severe symptoms	4

WHO Case Definitions of HIV for Surveillance and Revised Clinical Staging and Immunological Classification of HIV-Related Disease in Adults and Children, 2006.

ART regimens for eligible pregnant women

The recommended first-line ART regimen for pregnant women is Tenofovir (TDF) 300 mg + Lamivudine (3TC) 300 mg + Efavirenz (EFV) 600 taken once a day in a fixed dose combination tablet.

Alternative first line ART regimens are:

- Zidovudine (AZT)+ 3TC+ EFV or
- AZT +3TC + Nevirapine (NVP)

Special considerations

Women who become pregnant while on ART should switch the ART regiment to TDF/3TC/EFV unless otherwise instructed by the CTC.

Practice Points

- Life-long ART is recommended for all pregnant women or breastfeeding women with HIV.
- Pregnant or breastfeeding women living with HIV should start ART as soon as possible regardless of gestational age, CD4 count or WHO clinical stage (Option B+).
- ART should continue throughout pregnancy, childbirth, breastfeeding and for life.
- All infants born to HIV positive women should receive ARV prophylaxis from birth to 6 weeks of age.

Table 5-3: First- and second- line ARV medications

First-line ARV medications for pregnant women	
Tenofovir	▪ Class of antiretroviral medications called nucleoside reverse transcriptase inhibitors (NRTIs) ▪ Absorbed quickly after taken by mouth

	▪ May be taken with or without food ▪ Common (mild, transient) side effects: Nausea, vomiting, diarrhoea ▪ Serious (uncommon) side effect – renal toxicity
Lamivudine (3TC)	▪ Class of antiretroviral medications called nucleoside reverse transcriptase inhibitors (NRTIs) ▪ Absorbed quickly after taken by mouth ▪ May be taken with or without food ▪ Common (mild, transient) side effects: headache and nausea ▪ Serious (uncommon) side effects: Lactic acidosis, liver damage.
Efavirenz	▪ Class of antiretroviral medications called non-nucleoside reverse transcriptase inhibitors (NNRTIs) ▪ Recommended to take on an empty stomach, but taking with a light meal may reduce the risk of nausea. ▪ Common side effects: Mood and sleep problems, usually during the first 4 weeks of treatment. In most cases these side-effects go away by themselves. Taking before going to bed can help. ▪ Serious (uncommon) side-effects: Severe rash, psychosis, liver problems.
Second-line ARV medications for pregnant women	
Zidovudine (ZDV, AZT)	▪ Class of antiretroviral medications called nucleoside reverse transcriptase inhibitors (NRTIs) ▪ Absorbed quickly after being taken by mouth ▪ Prenatal and neonatal exposure to AZT is generally well-tolerated ▪ May be taken with or without food ▪ Common side effects: Anaemia, nausea, vomiting, fatigue, headache ▪ Serious (uncommon) side effects: Severe anaemia, liver problems
Nevirapine (NVP)	▪ Class of antiretroviral medications called non-nucleoside reverse transcriptase inhibitors (NNRTIs) ▪ Absorbed quickly after being taken by mouth ▪ Cross the placenta quickly to protect the infant ▪ Long half-life benefits the infant ▪ May be taken with or without food ▪ Common side effects: Allergic reaction, headache, rash (usually in the first six weeks of treatment)

	▪ Serious (uncommon) side effects: Severe rash (Stevens Johnson syndrome). Symptoms include: fever, generally feeling ill, extreme tiredness, muscle or joint aches, blisters, oral lesions, eye inflammation, facial swelling, signs and symptoms of liver problems.

More information on ARV medications is included in *Appendix 5-E: ARV Medications for Adults and Children in Tanzania* and *Appendix 5-F: Information about Antiretroviral Medications.*

5.4 Adherence Counselling and Support

ART adherence counselling

Adherence to care is defined as a patient's ability to follow a care and treatment plan in the long term, attend follow up appointments as scheduled, take medications at prescribed times and frequencies, recognize side effects and seek treatment, and follow instructions regarding food and other medications, as well as avoid risk behaviours and practices such as drinking alcohol, having unprotected sex, etc.

In adherence to ART, emphasis is on a strict need for 95% or greater adherence to prescribed medications. In practice, with once –daily dosing, this means not missing more than one dose of ART a month. Adherence is critical because ART suppresses the amount of virus in the body (the viral load) but does not cure HIV or AIDS. As such, attaining the required level of ART adherence is required because viral suppression cannot be achieved when ART is not taken as prescribed:

Viral replication occurs if adequate levels of ARV medications are not maintained, and this results in the rapid development of mutations of the virus.

⬇

These mutations create virus that is resistant to the medications.

⬇

The consequences of this include a lack of response to treatment by the client with potential HIV disease progression and potential transmission of drug-resistant virus to the infant or sexual partner(s).

⬇

The resulting programmatic implication of this is the loss of effectiveness of the first line regimen that will have wide public health implications for the entire country. Adherence is therefore a major requirement for successful care and treatment of HIV and AIDS.

Practice Point

Adherence of 95% or greater to prescribed medications is required for long-term success of ART and to avoid the development of resistant virus. This means not missing more than one dose of ART a month. Healthcare workers play a critical role in supporting clients to achieve and maintain this level of adherence.

Table 5-4: Adherence Counselling and Support

Measures to increase ART adherence
Educate clients ▪ Make sure the client knows that ART is not a cure and that it requires a long-term commitment. ▪ Review each medication in the ARV regimen with the client. ▪ Assist the client in planning a dosage schedule that works for him/her. ▪ Remind clients of food and beverage recommendations ▪ Help clients understand that ARV medications are effective only if they are taken every day. **Assess and give guidance on adherence** ▪ Monitor for adherence through pill counts and encourage the client to bring all medications to appointments. ▪ Provide simple written information, diagrams or pictures on when to take medications. ▪ Encourage clients to disclose their HIV status to at least one friend or family member who knows about their ART and can remind them to take their medication. **Help clients understand and manage side effects** ▪ Discuss common side effects and how to manage them before they occur. (See *APPENDIX 7-D: Information about Antiretroviral Medications*for information on how to manage common side effects of ARV medicines.) ▪ Differentiate between short-term side effects of medication that will resolve and emergency symptoms that would prompt medical attention (e.g., shortness of breath). **Work with other organisations/CTCs** ▪ Work with the local CTCs to understand how to report ARV drug side effects. ▪ Help clients understand that they have to attend CTCs regularly. ▪ Clients should be encouraged to join HIV and AIDS support groups if possible. ▪ Keep organised appointment records for clients attending CTCs.

Checklists can and should be used at the RCH facility or in the CTCs to structure adherence counselling sessions and for documentation of counselling sessions. Using checklists and documenting counselling sessions helps to improve the quality of counselling delivered, as it informs on areas that need to be strengthened through supportive supervision and continued in service training. Formal Home-Based Community Support is an effective strategy for improving adherence to care and treatment. See *Appendix 5-C: Adherence Counselling Checklist and Appendix 5-D Formal Home-Based Community Support*.

5.6 ARV prophylaxis for Infants

Infant prophylaxis provides added protection from early postpartum transmission, particularly in situations where women have started ART late in pregnancy or have less than optimal adherence to ART. In these instances, full viral suppression may not been achieved.

Maternal ART should be coupled with the daily administration of NVP to infants from birth – or as soon as feasible thereafter – until 6 weeks of age for all HIV-exposed infants, regardless of the mode of infant feeding. All infants born to women living with HIV should receive ARV prophylaxis, including infants of mothers receiving ART and infants of mothers who did not receive ART. Infant prophylaxis is the same for all infants, whether or not the mother received ARVs and irrespective of the mode of infant feeding as shown in Table 5.6 below.

Table 5.6: Nevirapine (NVP) prophylaxis for all HIV-exposed infants[a,c]

Infant NVP dosing recommendations	
Infant birth weight	**NVP daily dosing**
Birth[b] to 6 weeks	
▪ Birth weight 2000–2499 g	▪ 1ml (10 mg) once daily
▪ Birth weight ≥2500 g	▪ 1.5ml (15 mg) once daily

a. Based on the dosing required to sustain exposure in the infant of >100 ng/mL with the fewest dose changes.
b. Low birth weight infants should receive mg/kg dosing, suggested starting dose is 2 mg/kg once daily.
c. Healthcare workers should be careful when using different formulations of NVP syrup, as the dosing will change according to the strength of the syrup available.

Prescribing ARV medications for treatment or prophylaxis

Any trained clinicians can initiate and maintain first-line ART.

All ARV medications given to women for treatment should be stored in a safe location, away from light, at room temperature and apart from any other medications used by family members.

Practice Points

Pregnant women who are diagnosed as HIV positive during ANC visits:

During ANC: Start tenofovir (TDF) 300 mg + lamivudine (3TC) 300 mg + efavirenz (EFV) 600 taken once a day in a fixed dose combination tablet.

- **During labour:** Continue with daily administration of TDF/3TC/EFV
- **Postpartum: Continue:** TDF/3TC/EFV for life
- **Infant:** Give NVP at birth or as soon as possible thereafter and continue until 6 weeks of age.

Pregnant women who test HIV positive during labour:

- Start Tenofovir (TDF) 300 mg + Lamivudine (3TC) 300 mg + Efavirenz (EFV) 600 taken once a day in a fixed dose combination tablet.
- **Postpartum:** Continue TDF/3TC/EFV for life
- **Infant:** Give NVP at birth or as soon as possible preferably 6 to 12 hours or when feasible and continue until 6 weeks of age.

Mothers who test HIV positive after delivery

- Start Tenofovir (TDF) 300 mg + Lamivudine (3TC) 300 mg + Efavirenz (EFV) 600 taken once a day in a fixed dose combination tablet.
- **Infant:** Give NVP as soon as possible and continue until 6 weeks of age.

5.7 Care of HIV-infected women during labour and delivery

All labour and delivery services should include interventions to prevent MTCT. These include:

- HIV testing for women whose HIV status is unknown and women with an initial negative test who were not retested after three months
- Administration of ART to HIV positive pregnant women and ARV prophylaxis to infants
- Implementation of safer obstetric practices

Labour and delivery care

Labour management should follow obstetric best practices and all HCWs must use Standard Precautions during labour and delivery as outlined in Table 5.7.

Table 5.7 Safer obstetric practices to reduce MTCT

Safer Obstetrical Practice	Description
Use Standard Precautions (good infection prevention practices) for all patient care.	Use protective gear, safely use and dispose of sharps, sterilise equipment and safely dispose of contaminated materials. See *Chapter 8, Safety and Supportive Care in the Work Setting for more details*.
Minimise vaginal examinations	Perform vaginal examinations only when necessary, using sterile technique.
Avoid prolonged labour.	Consider use of oxytocic medications to shorten labour when appropriate. Use non-invasive foetal monitoring to assess need for early intervention. Use a partogram to monitor the progress of labour, and record all medications used during labour, including ART.
Avoid artificial rupture of membranes.	Avoid early rupture of membranes (before 7 cm dilation) unless necessary.
Avoid unnecessary trauma during delivery.	Avoid invasive procedures, including scalp electrodes or scalp sampling. Avoid routine episiotomy. Minimise the use of instrumental vaginal delivery such as forceps or vacuum delivery.
Minimise the risk of postpartum haemorrhage	Carefully manage all stages of labour to prevent infection and avoid prolonged labour. Actively manage the third stage of labour by using oxytocin, ergometrine or misoprostal medications and controlled cord traction. Perform uterine massage.

	Repair genital tract lacerations. Carefully remove all products of conception.
Use safe transfusion practices.	Minimise the use of blood transfusions. Use only blood screened for HIV, hepatitis B and C and, when available, syphilis and malaria.
Provide support and reassurance.	Emotional support during labour is important particularly for women living with HIV. Whenever possible, women living with HIV should have a companion of their choice present during labour (preferably companions aware of their HIV status).

5.8 Special labour and delivery considerations

Obstetric care in the home delivery setting

Healthcare workers should strongly encourage all women to give birth at facilities where skilled HCWs can address potential complications and provide specialised care to reduce the risk of MTCT. In the interest of women who choose to give birth at home, pregnant women and home birth attendants should be trained to deliver basic PMTCT interventions. All pregnant women benefit when home birth attendants are knowledgeable about the signs and symptoms of complications during birth and know when and how to refer women to healthcare facilities. Home birth attendants should receive information on:

- How HIV is transmitted from mother to child
- Risk factors for MTCT
- Safer delivery practices to reduce the risk of MTCT
- Standard Precautions

Practice Point

All infants delivered at home should be brought to the health facility as soon as possible after delivery for the infant prophylaxis regimen.

Mode of delivery

Caesarean section performed before the onset of labour or membrane rupture has been associated with reduced MTCT in circumstances where maternal viral load is high. However, in Tanzania, the capacity to perform caesarean sections to reduce MTCT is low; therefore this operation is not regularly performed. With effective use of ART, Caesarean section is not indicated.

Practice Point

Caesarean section is indicated only for obstetric reasons; it is not recommended for the purpose of reducing MTCT in Tanzania.

Care after a spontaneous abortion (miscarriage)

Women living with HIV who are symptomatic may be at higher risk of spontaneous abortion (miscarriage). In some cases, the HIV status of the woman may be unknown. For women who have a spontaneous abortion, HCWs should:

- Provide HIV testing and counselling, if not tested.
- Assess for signs and symptoms of HIV infection
- Consider the use of antibiotics after uterine evacuation
- Conduct family planning counselling

5.9 Immediate post-delivery care of HIV-exposed infants

Regardless of the mother's HIV status, all infants should be kept warm after birth and dried carefully. Infants should be handled with gloved hands until maternal blood and secretions have been washed off. In caring for new-borns, HCWs should observe Standard Precautions.

Exposed infant discovered post delivery

Administer NVP syrup immediately after birth and continue at appropriate dose until six weeks of age.

- Infant prophylaxis is most effective when given as soon as possible after birth – preferably within 6 to 12 hours.
- However, NVP syrup may be started between birth and four weeks of age for infants who present late. NVP prophylaxis should stop when the infant is six weeks of age, even if started late.

Practice Point

Infants who are diagnosed with HIV infection should initiate ART at CTC or by a trained clinician. See *Chapter 7: Care and support of HIV-exposed and HIV infected infants and children* for additional information.

Safer delivery practices for infants

The goal of safer delivery practices for HIV-exposed infants is to minimise trauma to the newborn and reduce the time that the newborn is exposed to the mother's blood and body secretions.

Practice Point

- Clamp the cord immediately after birth, and avoid milking the cord (avoid squeezing it towards the infant). Cover the cord with gloved hand or gauze before cutting to avoid splash of cord blood.
- Use suction only when the infant shows signs of distress or aspiration. Use either mechanical suction at less than 100 mm Hg pressure or bulb suction, rather than mouth-operation suction.
- Place the infant on the mother's breast if she is going to breastfeed. If she is using replacement feeding, place the infant on her body for skin-to-skin contact and provide help with the first feed.
- Administer ARV prophylaxis as soon as possible following birth.
- Administer Bacillus Calmette-Guérin (BCG) and polio vaccines according to national guidelines.
- For non-breastfed infants, administer vitamin A 50,000 IUs at birth or within 6 months. See *Appendix 7-C: Vitamin A Supplementation* for the complete schedule of vitamin A administration.

5.10 Management of HIV-infected women and their infants in the immediate postpartum period

Immediate post-delivery care: Healthcare workers should use Standard Precautions when assessing vaginal bleeding and should dispose of blood-stained linens and pads safely.

Postpartum care for women with unknown HIV status

Women whose status is unknown should receive the same postpartum care as women with HIV infection. They should be strongly encouraged to be tested for HIV and to follow the national recommendation to breastfeed exclusively.

HIV testing and counselling: Women who received HIV testing during labour and delivery should receive additional HIV post-test counselling postpartum. Women of unknown HIV status should receive pre-test information, counselling and HIV testing, unless they decline, so that their infants can receive ARV prophylaxis if needed. Partners and other siblings of HIV-infected women should be encouraged to receive pre-test information, counselling and HIV testing.

Counselling about safer infant feeding: All women, regardless of HIV status, should receive infant feeding counselling during postpartum care according to the national guidelines and as outlined in *Chapter 6: Infant Feeding in the Context of HIV Infection*. Mothers should receive support to exclusively breastfeed.

- Healthcare workers should encourage and provide counselling about exclusive breastfeeding or provide counselling on replacement feeding for women who choose to do so, before the women and their infants leave the facility or hospital.
- Mothers should demonstrate chosen infant feeding method and HCWs should observe the mother implementing proper feeding technique before discharge.
- Healthcare workers should discuss with the mother how she will cope with possible stigmatisation if she chooses not to breastfeed and advise her on the suppression of lactation.

ARV treatment for mother and ARV prophylaxis for the infant: All mothers living with HIV need to be informed of the importance of adherence and the correct way to take their ART and how to administer ARV prophylaxis to their infants.

Vitamin A supplementation: Before discharge, HCWs should administer vitamin A 200,000 IUs to the mother.

Counselling about infant HIV testing and CPT: Women with HIV must be provided with counselling about the importance of infant testing and the schedule for testing prior to discharge. HIV-exposed infants should have an initial HIV test at the age of 4 to 6 weeks. Infants who test HIV-negative will need repeat HIV testing six weeks after complete cessation of breastfeeding. In addition, all HIV-exposed infants should begin CPT at the age of 4 to 6 weeks. These essential follow-up services are discussed in *Chapter 7: Comprehensive Care and Support for Mothers and Families with HIV Infection.*

Counselling about postpartum family planning: Women living with HIV should receive counselling on preventing unintended pregnancy. Use of condom as dual protection should be discussed in order to prevent HIV re-infection. For more information see *Chapter 7: Comprehensive Care and Support for Mothers, Babies and Family Members living with HIV.*

General postpartum education

Regardless of HIV status, the mother will need to be educated before discharge about:

- Accessing help in the event of postpartum haemorrhage and other complications
- How to dispose of potentially infectious materials, such as lochia and blood-stained sanitary pads
- Perineal and breast care
- Care of the infant's umbilicus
- Proper hygiene, including changing diapers and washing the infant
- Recognising signs and symptoms of infant illness and HIV infection (See *Chapter 7: Comprehensive Care and Support for Mothers and Families with HIV Infection)*
- Recognising signs and symptoms of postpartum infection. These include: burning with urination, fever, awareness of heartbeat; foul smelling lochia, redness, pain, pus or any discharge from incision or episiotomy site; cough (dry or producing sputum) or shortness of breath and severe lower abdominal pain.
- Women should have access to the chosen family planning method within 6 weeks after delivery to avoid unintended pregnancy or the risk of new infection. Encourage the use of condoms for dual protection.

Scheduling of comprehensive care visits for the mother and infant

Mothers with HIV and their families will need additional on-going HIV care, treatment and support services. The postpartum period is the time to implement the follow-up plan to connect mothers and their families with medical and support services. Healthcare workers should facilitate referrals and linkages to HIV treatment, care and support services. Healthcare workers are responsible for ensuring that the mother knows the time, location, contact person and purpose of all follow-up appointments. These essential follow-up

services are outlined in *Chapter 7: Comprehensive Care and Support for Mothers and Families with HIV Infection*.

Practice Point

Standard of care, mother-child follow-up in RCH will continue until the child attains the age of 5 years.

Practice Points

- All postpartum follow-up appointments for the mother and infant, including infant HIV testing and immunisations, should be scheduled before discharge.
- Women should be instructed on the amount, time, frequency and duration of their ART medication. They should receive information about the importance of adhering to ART.
- Women should receive information about the importance of observing time for infant HIV testing and adherence on ARV and CPT prophylaxis for their infants.
- Women living with HIV should return for postpartum care at 7, 28 and 42 days postpartum. When HIV care and treatment services are not available at the RCH clinic, they should be immediately referred to a nearby CTC.
- All infants should have their HIV exposure status recorded on their immunisation cards and should be followed monthly at Under-Five clinics.

CHAPTER 6: Infant Feeding in the Context of HIV Infection

6.1 Transmission of HIV through breast milk

Because HIV is found in breast milk, there is a possibility of HIV transmission to infants breastfed by an HIV-infected woman. Therefore, women with HIV should be supported to feed their infants in a manner that reduces risk of HIV and provides the greatest likelihood of HIV-free survival of their children. The most appropriate infant feeding method for an HIV-infected mother depends on her individual circumstances, including her health status, and the local situation. Her choice should consider the health services available and the counselling and support she is likely to receive. Her infant feeding choice should consider not only prevention of HIV transmission needs as well as the infant's nutritional requirements and protection against non-HIV morbidity and mortality.

Counselling and support for infant feeding can improve feeding practices, help to prevent malnutrition and reduce the risk of death in children.

Definitions

Exclusive breastfeeding (EBF): Feeding an infant *ONLY* breastmilk and no other liquids or solids, with the exception of multi-vitamins, mineral supplements or medicines prescribed by a HCW.

Exclusive formula feeding (FF): Feeding an infant, who is not receiving any breast milk, only commercial infant formula and no other liquids or solids. Infant formula is the only replacement feed that meets an infant's nutritional requirements.

Mixed feeding (MF): Feeding an infant breastmilk and other liquids or foods (such as water, tea, formula, animal milk, and porridge).

Complementary feeding: Providing an infant with foods or liquids other than breast milk or formula. All infants, whether breastfed or formula fed, require nutritious foods beginning at 6 months of age.

- Without any intervention, 5% to 20% of infant breastfed by their HIV-positive mothers become infected with HIV. Factors that increase the risk of transmitting HIV during breastfeeding include mastitis, cracked or bleeding nipples, breast abscesses, candida infection of the breasts, oral ulcers or sores in the infant's mouth, mixed feeding and high maternal viral load, which usually occurs with recent HIV infection or advanced HIV disease (AIDS). For most women in Tanzania, the benefits of breastfeeding outweigh the risks, even for women with HIV. Breastfeeding can be made safer by breastfeeding exclusively for the first six months of life and by supporting women to position and attached their infants in a way that reduces risk of breast conditions. Additionally, ART dramatically reduces risk of HIV transmission through breastfeeding (see chapter 5 for more on ART).

Baby Friendly Hospital Initiative (BFHI)

The Baby Friendly Hospital Initiative (BFHI) is a worldwide project launched in 1991 by the World Health Organization and UNICEF, which recognises that good maternity care promotes breastfeeding. The Ten Steps to Successful Breastfeeding summarise practices

that improve conditions for all mothers and babies, including those who are not breastfeeding. Every facility providing maternity services and care for newborn infants should follow the BFHI Ten Steps to Successful Breastfeeding.

6.2 Risks associated with mixed feeding before 6 months of age

In the first 6 months of life, HIV-exposed infants who are mixed fed (i.e., breastfed infants who are provided with other liquids and food; or formula fed infants who are also given breastmilk) are significantly more likely to acquire HIV infection than infants who are exclusively breastfed or exclusively replacement fed. Increased risk of HIV transmission occurs because foods and liquids irritate the infant's intestinal mucosa, permitting passage of the HIV virus through the gut. Mixed fed infants also have increased risk of diarrhoeal illnesses and of malnutrition, in part because they don't enjoy the protection afforded by exclusive breastfeeding. Babies breastfed exclusively have fewer episodes of bacterial infection compared with babies who are mixed fed.

6.3 National recommendations for safer infant feeding

The importance of infant feeding counselling

Healthcare workers play an important role by providing mothers with infant-feeding counselling.

- All women, regardless of HIV status, should be provided with infant feeding counselling that outlines the advantages and benefits of breastfeeding and emphasises the role of exclusive breastfeeding in the first six months of life in reducing the risk of infant death from malnutrition, diarrhoea and other childhood infections.
- For mothers who are living with HIV, infant feeding counselling can support improved infant-feeding practices that reduce the risk of infant death from infections and prevent MTCT. Quality infant feeding counselling should include information that assists women and their families in making informed decisions about how and what to feed their children.

Recommendations for *uninfected* women and those whose HIV status is *unknown*

- Women who are HIV-negative and those who do not know their status should receive counselling on the benefits and advantages of breastfeeding and be encouraged to breastfeed exclusively for the first six months of life.
- Women who are not infected with HIV or who do not know their status will also require counselling on safer sex and the risks of becoming infected with HIV during pregnancy or breastfeeding. Women with unknown HIV status should be encouraged to be tested for HIV.
- Women who think they may have been exposed to HIV while pregnant or breastfeeding should be encouraged and supported to re-test for HIV.

Practice Point

The national recommendation for uninfected women and those whose HIV status is unknown is to breastfeed exclusively for the first 6 months of life and then introduce complementary foods while continuing breastfeeding for 24 months or beyond.

Recommendations for women living with HIV

Women living with HIV and their HIV-exposed infants should be provided with the HIV-related care they need. This includes treatment using life-long ART and ARV prophylaxis for infants in the first six week of life. Maternal ART reduces the risk of HIV transmission during pregnancy, labour, delivery and during the breastfeeding period.

Women living with HIV should be encouraged to breastfeed exclusively for the first six months of life and then introduce complementary foods while continuing to breastfeed to 12 months of age.

At 12 months:

- If the child is either HIV-uninfected or of unknown HIV status, breastfeeding should stop gradually (over a period of one month).
- If the child is known to be HIV-infected, mothers are strongly encouraged to continue breastfeeding as per the recommendations for the general population, that is, up to 24 months or beyond.

Conditions needed for safe exclusive formula feeding

Mothers known to be HIV-infected should only give commercial infant formula to their infants when specific conditions are met:

a. Safe water and sanitation are assured at the household level and in the community; **and**

b. The mother, or other caregiver can reliably provide enough infant formula to support normal growth and development of the infant; **and**

c. The mother or caregiver can prepare it cleanly and frequently enough so that it is safe and carries a low risk of diarrhea and malnutrition; **and**

d. The mother or caregiver can, in the first six months, exclusively give infant formula; and

e. The family is supportive of this practice; **and**

f. The mother or caregiver can access health care that offers comprehensive child health services

Whether the child is HIV infected or uninfected, breastfeeding should only stop once a nutritionally adequate and safe diet without breast milk can be provided.

A woman who wishes to stop breastfeeding before it is recommended should be encouraged and supported to continue breastfeeding for the first 12 months. Breastfeeding for at least 12 months prevents many of the complications associated with early cessation and the challenge of providing a safe and adequate diet without breast milk.

Recommendations for safer infant feeding according to HIV status are summarised in Table 6.1.

Table 6.1: National infant feeding recommendations according to HIV status

Client situation	Feeding recommended for the first 6 months	Feeding recommended >6 months
HIV-negative woman	Exclusive breastfeeding	Introduce complementary foods while continuing to breastfeed till 2 years of age and beyond
Woman living with HIV	Exclusive breastfeeding	Introduce complementary foods while continuing to breastfeed to 12 months of age. **At 12 months:** ▪ If the child is either HIV-uninfected or of unknown HIV status — breastfeeding should stop gradually (for the period of a month) ▪ If the child is known to be HIV-infected — continue breastfeeding up to 2 years of age and beyond
Woman of unknown HIV status	Exclusive breastfeeding	▪ Introduce complementary foods while continuing to breastfeed till 2 years of age and beyond Encourage this group of women to test for HIV
Mixed feeding during the first 6 months of life is never recommended and should be avoided by all women, regardless of HIV status.		

6.4 Counselling for safer infant feeding

Safer infant feeding counselling for women who are living with HIV

The steps in infant feeding counselling for women living with HIV are summarised below:

- **Step 1:** Explain the risk of MTCT through breastfeeding continues as long as the infant breastfeeds. Discuss how to reduce this risk; ensure the mother knows that this risk is dramatically reduced if she takes ART every day as prescribed and breastfeeds exclusively for the first 6 months of life.
- **Step 2:** Summarise the advantages and disadvantages of breastfeeding and formula feeding, starting with the mother's preference.
- **Step 3:** Explore with the mother her home and family situation, discuss conditions needed to formula feed if the mother is considering formula feeding.
- **Step 4:** Recommend exclusive breastfeeding for the first six months with the introduction of complementary foods and continued breastfeeding to 12 months of age.
- **Step 5:** Demonstrate to the mother how to breastfeed (or formula feed, if she meets the conditions).
- **Step 6:** Explain when and how to stop breastfeeding (or formula feeding if she meets the conditions).
- **Step 7:** Provide follow-up counselling and support.

Timing of infant feeding counselling

Infant feeding counselling should start in ANC with HIV-infected women receiving counselling over the course of several sessions, when possible. Encourage the woman to return to ANC for scheduled visits during which she will receive more information, counselling and support on infant feeding. Infant feeding counselling should resume immediately postpartum, and during every postpartum and Under 5 clinic visit.

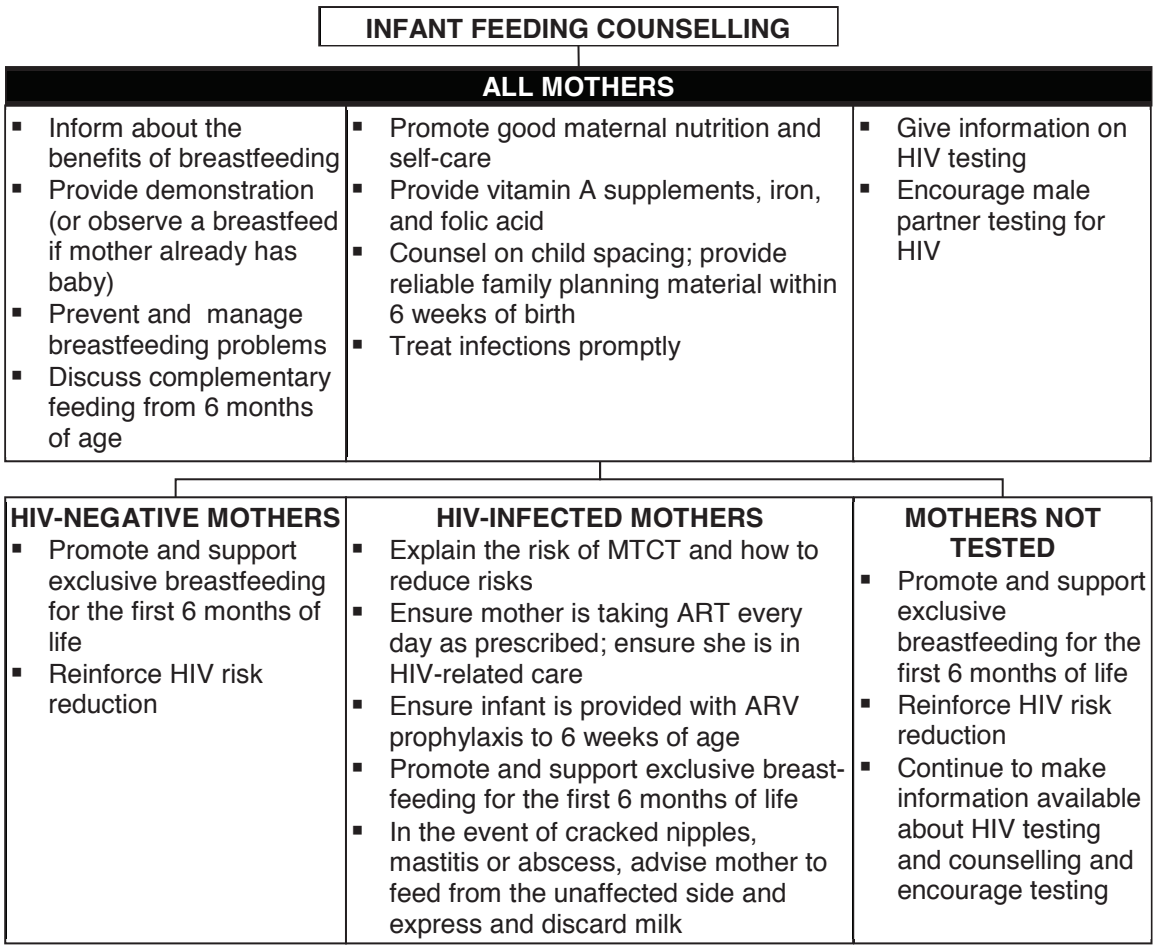
Healthcare workers should encourage the inclusion of the client's partner or family member at each stage of counselling.

Growth monitoring

Regularly assess feeding practices and whether any change is envisaged. Check for signs of illness; discuss complementary feeding for infants 6 to 24 months. When safe and appropriate, encourage the woman to involve her partner or other family members (such as mother or sister) in infant-feeding decisions.

Refer mothers to trained infant-feeding counsellors for continued support during the first two years of a child's growth and development. Guidelines for promoting safer infant feeding are summarised in Figure 6.1.

Figure 6.1: Guidelines for promoting safer infant feeding



6.6 Considerations for successful breastfeeding

- For women who choose to breastfeed, the BFHI's Ten Steps to Successful Breastfeeding provides important guidance for supporting a woman who is breastfeeding>
- Exclusive breastfeeding requires feeding on demand.
- All mothers should receive education and support for successful breastfeeding during ANC, after delivery, and during postpartum and follow up. Many of the problems that arise during breastfeeding are preventable with good positioning and proper infant attachment and good maternal healthcare. Mothers should receive instruction on good breastfeeding technique. Correct positioning and attachment can help avoid pain and damage to the nipples, engorgement and a poor milk supply.
- Prevention and early management of harmful breast conditions can ensure a more successful breastfeeding experience.
- Promote exclusive breastfeeding, which dramatically decreases the risk of MTCT. Provide the mother with support to resist mixed feeding, role play a typical home scenario with her if she would find it helpful.
- Frequent feedings can reduce HIV transmission risk considerably by preventing mastitis and breast abscesses. See Section 6.9 for preventing and treating breast problems.
- Mothers should be assessed for mastitis at each follow-up visit. Other breast conditions to monitor in women living with HIV are thrush and herpes simplex virus (HSV), which can be passed from the infant to the mother.

Infant feeding counselling in postpartum settings

When infant feeding counselling takes place during the postpartum period, the focus will be on steps 5, 6 and 7 of the counselling process.

Infant feeding counselling at this stage should include the following activities:

- Monitor infant growth
- Assess development
- Provide immunisation
- Ask how breastfeeding is going for the mother
- Check current feeding practices and decide if any change is desirable. Additional counselling about feeding is needed when a child is sick or a mother returns to work or changes her feeding methods.
- Assure that infant is receiving enough milk. A mother knows she is feeding her baby adequately when:
  - Baby gains weight
  - Baby urinates 6 to 8 times in a 24-hour period
  - Baby has at least 2 to 5 bowel movements in a 24-hour period (There is substantial variability.)
- Ensure the mother is taking lifelong ART as prescribed; ensure the mother is in care.

- Reinforce the importance of giving ARV prophylaxis to the infant for the first six weeks of life (as per national ART guidelines)
- Ensure CPT is initiated in the infant at 4 to 6 weeks of age. Check adherence
- Assess the need for HIV testing following the national algorithm. The initial infant HIV test for HIV-exposed children is provided at 4 to 6 weeks of age. Follow-up testing is required for breastfeeding infants and for infants who are symptomatic. This is discussed in more detail in Chapter 4, Testing and Counselling.
- Check for signs of illness in the mother and infant; check the infant's mouth for sores

If the infant is less than six months old:

- Check if mother breastfeeds exclusively; ask about mixed feeding. The infant should not be given any other liquids or foods other than breast milk (not even water or formula). Ask how she handles pressure from friends and family to give her baby other liquids or foods. Role play with her if she would find it helpful
- Check if mother breastfeeds on demand and for as long as the infant wants
- Teach mothers how and when to express her milk when needs arise Provide her with support to cup feed
- Observe a breastfeed and assess the mother's breasts for abnormalities; advise appropriately

If the infant is approaching six months:

- Discuss complementary feeding with continued breastfeeding to 12 months. Discuss transitioning to animal milk from 12 months of age

If the infant is approaching 12 months:

- Discuss weaning at 12 months and transitioning to animal milk until at least 24 months of age; provide support
- Discuss post-weaning HIV testing
- Provide additional support (as needed) to cup feed

Practice Point

- During infant feeding counselling, breastfeeding mothers should receive instruction in good breastfeeding technique, including correct positioning and attachment.
- Mothers, particularly those with HIV, should be assessed for for breast conditions at every follow-up visit. HIV-exposed infants should be checked for mouth sores.
- Mothers should be encouraged and supported to adhere to their ART regimen. They should also be provided with support to administer ARV prophylaxis to their infants for the first six weeks of life.

6.7 Replacement feeding for mothers living with HIV

Replacement feeding means providing infants with milk feeds that are not breast milk but which meet an infant's nutritional requirements. During the first six months of life, the only replacement feed that meets an infant's nutritional requirements is commercial infant

formula. If being replacement fed, an infant should not receive any other food or liquid besides infant formula until 6 months of age.

Practice Point

- During the first six months of life, the only replacement feed that meets an infant's nutritional requirements is commercial infant formula.
- An infant fed commercial infant formula should neither breastfeed nor be given any other food, water or other types of liquids before six months of age, except for multivitamins or medicines when indicated.

Commercial infant formula

- Commercial infant formula lacks some of the essential fatty acids present in breast milk.
- Commercial infant formula is usually a powder that is reconstituted with water. It is usually adequately fortified with micronutrients.
- Formula is available for babies from birth to six months of age and from six months of age onwards (usually known as follow-up formulas). Formula feeding mothers need support to ensure that they purchase the right formula for their infant, given the infant's age.
- Commercial formula is not sterile; as such it must be reconstituted with safe water that is at least 70°C to reduce risk of infection.

Home-modified animal milk

Home modified animal milk is not recommended during the first six months of life.

Animal milks are relatively low in iron, zinc, vitamin A, vitamin C and folic acid and lack the essential fatty acids. Animal milks may, however, be given to infants from 6 months of age, but infant formula is preferred from 6 to 12 months of age. Animal milks given from 6 months of age do not need to be fortified with sugar or diluted; they do, though, have to be boiled.

Infant feeding counselling in postpartum settings

As with mothers who are breastfeeding, follow the steps in Section 6.6 (i.e., monitor infant growth, assess development, provide immunisation, ensure mother is taking ART and infant is taking ARV prophylaxis or CPT — depending on age), when providing postpartum infant feeding counselling to mothers who formula feed. Adapt the steps in as follows.

If the mother already has a child and is formula feeding:

- Ask how formula feeding is going for the mother
- Check if she uses the recommended infant formula and is preparing it correctly and hygienically (see Section 6.8)
- Check if she replenishes her infant formula stock before it runs out

- Check that she gives an appropriate volume and number of feeds (if not, recommend that she adjust the amount according to the infant's age)
- Check that she discards unused formula after one hour
- Ensure she is using a cup instead of a bottle for feeding the infant (Section 6.8)

If the infant is less than six months old:

- Check that the infant is not mixed fed
- Check that the mother is not giving breast milk in addition to formula

6.8 General guidelines for educating mothers and demonstrating replacement feeding

Mothers who choose to formula feed will need detailed instruction on how to prepare the milk feeds correctly. When a mother prepares infant formula, it is important that she observes the strictest hygiene, mixes the formula and water in the correct amounts consistently. Small mistakes in the feed preparation may not have an immediate effect but may make an infant ill or malnourished if repeated over time.

Poor preparation practices can have serious effects. It is therefore important that HCWs know how to demonstrate preparation of infant formula. Counselling and demonstrations about formula feeding should be held in a private one-to-one session, out of view of other mothers. Education and demonstrations about preparing formula feedings should be done by a HCW with training in infant and young child feeding.

Mothers who plan to use formula should bring to the clinic a tin of the formula they intend to use. The session should include the following

- Make sure that the selected formula complies with national standards.
- Show the mother where she can find the expiry date on the tin.
- Demonstrate how to reconstitute replacement feeds.
- Invite the mother to then give a return demonstration to assure she will be able to prepare the replacement feeds correctly and safely at home. For the return demonstration, let the mother prepare the formula herself; watch her carefully, and correct any mistakes.
- For mothers who cannot read, be sure they are able to recall instructions and the amounts necessary for preparing formula feeds. If possible, mark the utensils to be used to reconstitute feeds.
- Mothers should only prepare enough infant formula for one feed at a time. Tell mothers to use prepared feeds within one hour. Reconstituted infant formula that is more than an hour old should not be given to the infant. It may, though, be added to cooked food or given to an older child.
- Reconstituted feeds should not be stored in a thermos because bacteria will grow in it.
- Replacement feeds should be given from an open cup, not a bottle or a cup with a teat because of the risk of contamination when feeding bottles are used (see "Feeding bottles" below).
- A baby will not need any other food besides formula milk until he or she is six months old.

- A baby younger than six months old, who is formula fed, should neither breastfeed nor be given any other food, water or other types of liquids, except for multivitamins or medicines when medically indicated.
- All women need information about family planning. Women who formula feed need to implement their family planning method of choice within six weeks of delivery, as they lose the protection that exclusive breastfeeding affords against pregnancy.
- Before the end of a demonstration session, check again that the mother is prepared to proceed with replacement feeding and is aware of the cost commitment.
- The mother should be encouraged to come back whenever she encounters any problem with preparing replacement feeds.

Preparing commercial infant formula

Supplies needed for formula feeding

- A suitable container for boiling water
- A cup for feeding the baby. The cup should only be used to feed the baby
- A measuring utensil that allows measurement in millilitres. Translate amounts in millilitres and grams into local household measures, for example most ordinary teacups hold about 150 ml
- Utensils for measuring and mixing

Ask the woman to bring to the infant feeding counselling session the containers that she plans to use to feed her baby. The counsellor can then demonstrate how to prepare formula using these containers so that they can be marked to show how much water will be needed to prepare formula.

Cleaning, sterilising and storing equipment for formula feeding

1. Begin by washing hands with soap and clean water.
2. Wash all feeding and preparation equipment thoroughly in hot soapy water.
3. Rinse thoroughly in clean and safe water.
4. Sterilise equipment by placing in a pan with water, cover the pan with a lid, and bring to a rolling boil. Keep the pan covered until the feeding equipment is needed. If feeding and preparation equipment is removed from the steriliser before it is needed, keep it covered in a clean place.

How to prepare a cup feed: The 12 steps

1. Clean and disinfect a surface on which to prepare the feed.
2. Wash hands with soap and water, and dry with a clean or disposable cloth.
3. Boil some clean and safe water. If using an automatic kettle, wait until the kettle switches off. If using a pan to boil water, make sure the water comes to a rolling boil for 1 to 2 seconds.
4. Read the instructions on the formula's packaging to find out how much water and how much powder you need. Adding more or less formula than instructed could the infant ill.

5. Pour the correct amount of boiled water into a cleaned and sterilised feeding cup. The water should be no cooler than 70ºC, so do not leave it for more than 30 minutes after boiling.
6. Add the exact amount of formula to the water in the feeding cup. Usually infant formula comes with a special measure (called a scoop) in the tin of powder. Follow the manufacturer's instructions on the tin.
7. Mix thoroughly by stirring with a cleaned and sterilised spoon.
8. Immediately cool to feeding temperature by placing the cup in a container of cold or iced water. To avoid contaminating the feed, make sure that the level of the cooling water is below the top of the cup.
9. Dry the outside of the cup with a clean or disposable cloth.
10. Check the temperature of the feed by dripping a little onto the inside of the wrist. It should feel lukewarm, not hot. If it still feels hot, cool some more before feeding.
11. Feed the infant.
12. Throw away any feed that has not been consumed within one hour.

When demonstrating the preparation of commercial infant formula:

- The healthcare worker should review the instructions on the formula tin with the mother, making sure she understands them. The manufacturers' instructions for mixing the formula need to be followed exactly, except for cases where the tin has instructions to bottle-feed the infant. If the expiry date on the tin has passed the content should be discarded.
- Help the mother calculate how much to feed her baby based on the monthly weighing session. For pregnant women use a birth weight of 3 kg for the purposes of demonstration.
- If the woman runs out of formula and cannot afford to buy more she should not add more water to make it last longer, nor should she breastfeed. She should feed her infant home-modified animal milk until she can get more commercial formula. See information below on preparing home-modified animal milk.

Preparing home-modified animal milk in the first 6 months of life

Home-modified milk can only be used for children under 6 months as a very last option, when there are no other alternatives. Infants who are fed home-modified animal milk must receive daily micronutrient supplements to help prevent anaemia and other forms of malnutrition. Home-modified animal milk also needs to be diluted with clean boiled water and fortified with sugar to increase the energy content for the first 6 months of feeding.

The following milks and liquids are not suitable for home-modified animal milk:

- Fresh animal milk already diluted by an unknown amount
- Skim-milk or low-fat milk powder
- Sweetened or condensed milk
- Thin cereal-based porridge and gruels (mixed porridge) Flavoured milk drinks and coconut milk

Feeding bottles

Use of feeding bottles and artificial teats should be actively discouraged because:

- Bottle feeding increases the infant's risk of diarrhoea, dental disease, and ear infections.
- Bottle feeding increases the risk that the infant will receive inadequate stimulation and attention during feedings.
- Bottles and teats need to be thoroughly cleaned with a brush and then sterilised by boiling in a pan of water; this takes time and fuel.
- Bottles and teats cost more than cups and are less readily available.

Feeding bottles are therefore not necessary and in most situations, should not be used.

6.9 Prevention and treatment of breast problems

Mastitis

Mastitis is an inflammation of the breast tissue surrounding the milk ducts usually caused by blocked ducts or engorgement (see Table 6.2). It can also be caused by bacteria entering a cracked nipple. Women should be informed about the signs and symptoms of mastitis. These include:

- Sudden, unilateral, localised tenderness and soreness
- Heat and swelling
- Fever
- Chills, body aches and fatigue

Inform women living with HIV that mastitis increases the risk of transmitting HIV to their infants through breastfeeding. Women with mastitis should avoid breastfeeding from the affected breast. Milk from the affected breast should be expressed and discarded frequently to prevent mastitis from becoming worse, help breasts recover and maintain milk production.

If only one breast is affected, the mother should continue to breastfeed from the healthy breast. If the milk from the healthy breast is not enough to fulfill the infant’s needs, she may express and heat milk from the affected breast and give it to the infant. If both breasts are affected, the woman should consider cessation of breastfeeding (while expressing breast milk frequently) until the mastitis is healed. The counsellor should help her choose an alternative feeding method for this period.

Women should receive information about the CARESS model for management of mastitis.

C — Compresses (hot and cold)

A — Antibiotics (if necessary)

R — Rest

E — Effective, gentle and frequent removal of breast milk

S — Stress identification and management

S — Support and follow-up

Table 6.2: Management of common breast conditions

Condition	Management
Engorgement	▪ Pump or manually express some breast milk to reduce engorgement. ▪ Support the breasts but avoid binding. ▪ Alternate warm showers with cold and warm compresses for pain relief. ▪ Relieve pain with paracetamol. ▪ For on-going prevention, consider increasing the frequency of feedings.
Sore or cracked nipples	The main causes of sore or cracked nipples are poor attachment and poor positioning. Tips for mothers in managing and preventing sore nipples include the following: ▪ Check positioning and encourage the infants to open the mouth wide when latching on. ▪ Offer the infant short, frequent feedings to encourage less vigorous sucking. ▪ Nurse on the least sore breast first, if possible. ▪ When removing the infant from your breast, break the suction gently by pulling on the infant's chin or corner of mouth. ▪ Change the feeding position at each feeding. ▪ Have an HCW assess cracked nipples for candidiasis and treat, if necessary.
Blocked ducts	Blocked ducts are often the result of inconsistent feeding or incomplete emptying of the breast, or pressure to the breast from tight clothes. ▪ Offer the affected breast first to ensure strong suckling. ▪ Gently massage lump towards the nipple. ▪ Use warm compresses and showers, and breastfeed immediately after.

For more details please refer to the IYCF guidelines.

6.10 Feeding after 6 months of age

All infants, including infants who continue to be breastfed, require nutritious complementary foods beginning at 6 months of age. Recommendations for complementary feeding should be based on locally available foods and feeding practices.

Caregivers should begin introducing complementary foods in small amounts at 6 months of age, gradually increasing the amount and variety of foods as the infant gets older, adapting to the infant's nutritional requirements and physical abilities.

Infants should continue to receive breast milk, infant formula, or boiled and cooled animal milk into the second year of life. For non-breastfed children receiving other sources of animal proteins, animal milk requirements after 6 months are at least 250 mL (1 cup) per day. Non-breastfed children require 2 cups of milk per day if milk is their only source of animal protein. Animal milks do not have to be diluted for infants older than 6 months of age. However, fresh animal milk should still be boiled to kill germs and improve digestibility. Milk may also be

given as sour milk or yoghurt after 12 months. Meals, including milk-only feeds, or combination of milk feeds and other foods, should be provided four or five times per day.

Sick children may need more food than healthy children because of the metabolic effects of infections. Energy requirements also are higher for children who are severely malnourished and undergoing nutritional rehabilitation (see Table 6.3).

Table 6.3: Practical guidance on the quality, frequency and amount of food to offer children 6–23 months of age who are breastfed on demand

Age	Texture	Frequency	Amount at each meal
6–8 months	Start with thick porridge, well mashed foods. Continue with mashed family foods.	2–3 meals per day Depending on the child's appetite, 1–2 snacks may be offered	Start with 2–3 tablespoons per feed, increasing gradually to ½ cup
9–11 months	Finely chopped or mashed foods, and foods that baby can pick up	3–4 meals per day Depending on the child's appetite, 1–2 snacks may be offered	½ cup
12–23 months	Family foods, chopped or mashed if necessary	3–4 meals per day Depending on the child's appetite, 1–2 snacks may be offered	¾ to 1 full cup[a]
If child is not breastfed, give an additional 1–2 cups of milk per day, and 1–2 extra meals per day.			

a. One cup = 250 mL

From: "*Infant and young child feeding. Model Chapter for textbooks for medical students and allied health professionals*" Available at: http://www.who.int/nutrition/publications/infantfeeding/9789241597494/en/

6.11 Transitioning from breastfeeding

If a nutritionally adequate and safe diet without breast milk can be provided, mothers with HIV should stop breastfeeding when their infants are 12 months old if that child is either HIV-uninfected or of unknown HIV status. Breastfeeding should stop gradually (over a period not less than one month).

If the child is known to be HIV-infected, mothers are strongly encouraged to continue breastfeeding up to 24 months or beyond.

To ease the transition to cup feeding, advise mothers to try cup feeding with expressed breast milk. Once the baby learns to take the familiar breast milk by cup, it may then be replaced by formula or boiled/cooled animal milk.

Healthcare workers should counsel mothers to follow these steps:

- Encourage mothers to introduce cup feeding of breast milk early, prior to stopping breastfeeding to facilitate the transition.
  - Before the mother stops breastfeeding, she should try expressing and cup feeding breast milk.

  - She should do this when the infant is not very hungry to avoid frustrating the baby.
- Every few days, the mother should increase the frequency of cup feeding and reduce the frequency of breastfeeding.
- The mother should stop putting the baby to the breast completely as soon as she and her baby are accustomed to frequent cup feeding.
- The mother should check that her baby is passing enough urine — at least 6 wet nappies/diapers in every 24-hour period.
- Until her milk production stops, the mother may want to express enough milk from her breasts so she is comfortable.

In the second year after giving birth, HCWs should remember:

- If it is not safe for a mother to stop breastfeeding when her child is 12 months of age, discuss with her the underlying issues and provide advice, support and referrals as needed.

6.12 Nutritional requirements for pregnant women and lactating mothers

Maternal nutrition and lactation

Women use energy for lactation. Breastfeeding women need an additional 500 kcal every day. This is the equivalent of one extra meal a day. Breastfeeding women can meet these requirements by increasing their nutritional intake and decreasing their physical activity. Micronutrient requirements increase during pregnancy and lactation and can affect the overall health of a pregnant or lactating woman.

For the mother to maintain good nutrition and health status the healthcare worker should:

- Counsel women to start antenatal clinics as soon as they suspect they are pregnant to monitor their health and the growth of the baby.
- Advise pregnant women and lactating mothers to eat a variety of foods from all food groups in adequate amounts every day.
- Advise pregnant and lactating women to eat an extra meal and snacks in between meals every day.
- Counsel pregnant women and lactating mothers to eat plenty of fruits and vegetables and drink enough safe water every day (8 glasses or 1.5 litres).
- Advise pregnant women to reduce heavy work load and rest for at least one hour during a day especially in the last three months of pregnancy.
- Counsel pregnant women and lactating mothers to avoid taking tea or coffee with meals because they will interfere with iron absorption and may contribute to anaemia. If tea or coffee is taken it should be at least one hour before or after meal.
- Counsel pregnant women and lactating mothers to avoid alcohol, narcotics or tobacco products.
- Give pregnant women and lactating mothers iron and folic acid, and use iodized salt to avoid iodine deficiency as per national guidelines.
- Give all mothers vitamin A supplement (200,000IU) immediately after delivery or within 8 weeks after delivery.

- Counsel pregnant women on the importance of immunization, use insecticide treated bed-nets and give her deworming tablets and anti-malarial as per national guidelines;
- Counsel pregnant women and lactating mothers on the importance of maintaining self-hygiene and hygiene of food, water and environment.
- Monitor weight gain and pregnancy development.

(Adopted from National IYCF guideline)

Cultural beliefs about food influence what a woman eats. There are many locally available nutritious foods that might be forbidden or discouraged during pregnancy and/or lacation because of cultural beliefs. Healthcare workers should be conscious of local food beliefs and traditions and be prepared to address them with their clients.

Practice Point

It is essential that HCWs counsel women on eating adequate food from all the five food groups, based on availability in their community.

Danger signs of malnutrition in lactating women

Signs of severe malnutrition in breastfeeding women include the following:

- **Weight:** Weight loss, reduced muscle mass, weakness
- **Bones:** Painful bones and joints, osteopenia, and distortions in the shape or size of bones
- **Skin:** Severe dryness or scale, atrophy, petechiae (small red spots on the skin that usually indicate a low platelet count) and ecchymosis
- **Mouth:** Angular stomatitis, glossitis, swollen or bleeding gums and decayed teeth
- **Hair/Nails:** Reddish, rusty coloured hair (loss of pigmentation of the hair), brittle and malformed (spooned) nails
- **Neurologic:** Disorientation, an abnormal gait, altered reflexes and sensory or motor neuron abnormalities

Practice Point

Women living with HIV who show signs or symptoms of malnourishment should be referred to nutritional counselling or management of other symptoms.

CHAPTER 7: Comprehensive Care and Support for Mothers, Babies and Family Members living with HIV

7.1 Integration of comprehensive PMTCT services

Comprehensive HIV care and treatment for pregnant and post-partum women and their infants should be integrated into the care delivered in RCH facilities. If comprehensive PMTCT services cannot be delivered in an RCH facility, these services must be arranged by strategic and coordinated referrals.

Care during pregnancy

Pregnant women living with HIV should be followed monthly in ANC and should receive a standard package of RCH services in addition to HIV-specific ANC. ART will be initiated and monitored at RCH. Clinical staging should be conducted at initiation of ART and at every visit thereafter. Immunologic stage (CD4 count) should be checked at initiation of ART and every six months. At all visits the HCW should assess and support adherence to medications and RCH appointments.

Postpartum care for women

Women will continue to receive HIV care and ART management in RCH until the child is two years of age. The first postpartum appointment should be within 1 week (7 days) of delivery. Additional postpartum appointments should take place 28 days and 42 days after delivery.

Practice Point

For RCH clinics that do not provide ART, the mother should be referred to a nearby CTC for ARV services.

Referrals to CTC must be confirmed through a review of the client's CTC card. Adherence to the CTC visit schedule should be checked and reinforced during RCH visits.

Care of HIV-exposed and HIV-infected infants

All infants should have their HIV exposure status determined and documented. This will help to identify HIV-exposed infants at all points of contact: outpatient clinics, paediatric inpatient wards, TB clinics, maternity wards and RCH clinics.

HIV-exposed infants should be seen at the RCH clinics (Under 5 clinics) for ARV prophylaxis, HIV testing, on-going counselling related to infant feeding and CPT as well as routine care. Monthly follow-up should be scheduled to allow for on-going monitoring of HIV exposure, growth and development and immunisations. To facilitate follow-up, infant HIV-exposure status (exposed or not exposed) and infant HIV test results must be recorded in the Road to Health card.

All children should be seen in the RCH clinic until the child is 5 years old.

Infants and children diagnosed with HIV-infection will be staged at Under 5 clinics, and clinical and immunologic investigations will be performed there. Children with confirmed or suspected (presumptive diagnosis) HIV infection should be referred to CTC immediately for initiation of ART. Monthly assessment can continue at RCH/Under -5 clinics.

Practice Point

There must be effective communication and coordination of patient care among RCH clinics, paediatric inpatient wards, CTC facilities, community follow-up systems and all HCWs involved.

Healthcare workers and facility managers in RCH clinics, (ANC, labour and delivery wards and postpartum clinics) should develop standard procedures to link mother-infant pairs to postpartum services. Procedures should be developed to support and confirm that mother-infant pairs follow through with these referrals. Referrals should include the time, location and contact information for the appointment.

Comprehensive HIV care, treatment and support services to be delivered in RCH or through coordinated referrals are summarised in Table 7.1.

Table 7.1: Comprehensive care, treatment and support services

Mother and partner	HIV-Exposed Child	Family
▪ Postpartum assessment of healing and routine physical assessment ▪ Determination of CD4 count ▪ Assessment of WHO clinical stage ▪ Provision of ART ▪ Prevention and treatment of OIs; provision of CPT ▪ Adherence counselling and	▪ HIV early infant diagnosis (HEID) ▪ ARV prophylaxis ▪ Provision of CPT ▪ Optimal infant feeding to promote survival and minimise HIV transmission ▪ Monitoring of growth and development	▪ Education and support for early infant HIV testing and follow-up care ▪ Assessment and referral for ART ▪ HIV testing and counselling for partner and siblings ▪ Family planning counselling, including

support ▪ Reproductive health care, including family planning and counselling about safer sex ▪ Cervical cancer screening ▪ Prevention and treatment of malaria ▪ Psychological and social support ▪ Nutritional counselling care and support	▪ Immunisations ▪ Early initiation of lifelong ART for children found to be living with HIV. Referral to CTC clinic if the facility does not provide ART	contraceptive options ▪ Referral and linkage to community service organisations and agencies ▪ Palliative care and symptom management for all family members living with HIV infection

7.2 Postpartum assessment of healing and routine physical assessment

During the mother's postpartum visits, HCWs should conduct the following activities to monitor the mother's healing:

- Measure blood pressure and temperature.
- Monitor uterine involution (shrinking).
- Check healing of any repaired genital/perineal lacerations or episiotomy.
- Examine the vulva and perineum for signs of infection, redness, tears, swelling or pus.
- Confirm cessation of postpartum bleeding (check sanitary pad for the amount of bleeding).
- Check for signs of infection.
- Check for signs of anaemia (e.g., pallor) and ask about fatigue.

7.3 Provision of ART

ARV medications improve maternal health by reducing related morbidities, which in turn improve survival chances of their babies. ARV medications decrease HIV viral load in the mother, which reduces an infant's exposure to HIV during pregnancy and during breastfeeding. ART also reduces the risk of transmitting HIV infection to an uninfected partner. ART does not cure HIV infection or AIDS. Suppression of viral load requires on-going treatment with ART; therefore, HIV infection requires life-long treatment with ART.

Pregnant or breastfeeding women with HIV should be started on life-long ART for their own health at the time of diagnosis. Women with HIV infection who are not pregnant or breastfeeding should initiate ART when their CD4 cell count is ≤350 cells/mm3 (regardless of WHO clinical stage) OR if classified as WHO clinical stage 3 or 4 (regardless of CD4 count).

The recommended first line regimen is a once-a-day fixed dose regimen of Tenofovir (TDF) + lamivudine (3TC) + efavirenz (EFV). This regimen should be continued postpartum and women should receive on-going counselling and support to continue HIV care and treatment in order to maintain good health and to reduce the risk of HIV transmission to others.

Alternative first line ART regimens are available if the recommended first line regimen is not tolerated. Available alternative regimens include AZT + 3TC+ EFV and AZT +3TC + NVP.

Monitoring patients on ART

Antiretroviral medicines are known to produce short- and long-term side effects in some people. Clinical follow-up is crucial. HCWs should ask clients about any side effects that they may have experienced and offer information on how to manage them. Clients should be questioned about other medications that may interfere with ARV medications. Patients experiencing intolerable side effects, potential drug interactions should be referred for evaluation at CTC. More information on ARV medications is included in *Chapter 5: Specific Interventions to Prevent MTCT* and in *Appendix 5-E: ARV Medications for Adults and Children in Tanzania* and *Appendix 5-F: Information about Antiretroviral Medications*.

Successful ART results in decrease in viral load, immune recovery and therefore an increase in the number of CD4 cells. Every six months, the CD4 count is used to monitor the immunologic response to ART. Patients with immunologic failure (falling CD4 count) while on ART should be referred for evaluation at CTC.

WHO clinical staging is critical to monitor the effectiveness of treatment in persons on ART and should be performed at every visit. (See *Chapter 5: Specific Interventions to Prevent MTCT and Appendix 5-B: WHO Clinical Staging of HIV and AIDS for Adults and Adolescents with Confirmed HIV Infection* for more information on clinical staging.) Ideally, the clinical stage should remain stable in an individual on ART.

Practice Point

- National guidelines recommend CD4 testing for adults and adolescents at initiation of ART and every six months thereafter.
- WHO clinical staging should be performed at every visit.

Clinical failure

Healthcare workers in RCH should *preliminarily* assess clinical failure of an ARV regimen using the WHO Clinical Staging System. Clinical events in the first 3 months after starting ART may be caused by immune reconstitution syndrome rather than clinical treatment failure. New or recurrent Clinical Stage 4 or the presence of at least three symptoms or infections after six months of ART may suggest treatment failure. In that case the HCW should seek advice from an experienced HIV clinician.

Healthcare workers should refer HIV-infected patients to HIV CTC when they:

- Show signs and symptoms of disease progression
- Develop side effects or adverse reactions to an ARV medication
- Are prescribed new (non-ARV) medications
- Show signs of poor adherence to ART

The first step in determining the cause of treatment failure is to comprehensively assess adherence to ART. Lack of adherence to ART is the most common cause of treatment failure. Adherence to ART includes taking ARVs correctly, as prescribed, even if the person feels healthy. ART is life-long; adherence requires taking ARVs every day, for

life. Adherence of 95% or greater to prescribed medications is required for long-term success of ART and to avoid the development of resistant virus. This means not missing more than one dose of ART a month. Healthcare workers play a critical role in supporting clients to achieve and maintain this level of adherence. See *Chapter 5: Specific Interventions to Prevent MTCT* for a detailed discussion of adherence support and the role of the healthcare worker.

Non-adherence includes missing one or more doses of medicine, sharing medicines with other people, stopping medicine for a day (or many days), taking medicines at the wrong times and/or taking medicines without following instructions about food or diet.

Practice Point

It is important not to judge clients if they are non-adherent. Instead, try to uncover the cause of non-adherence and help find ways to resume good adherence as soon as possible.

7.4 Prevention and treatment of OIs

Preventing and treating OIs and other infections can reduce rates of illness and death among all women who are living with HIV. It can also reduce the risk of adverse pregnancy outcomes such as preterm birth and the risk of other conditions that increase the risk of MTCT, such as STIs. All women living with HIV infection should be assessed for signs and symptoms of infection and should receive prompt treatment according to national protocols.

Common infections among pregnant women include:

- STIs, including syphilis
- Urinary tract infections
- Respiratory infections
- Vaginal candidiasis
- Tuberculosis

All pregnant women with HIV infection should receive prophylaxis against common infections or illnesses during pregnancy, including:

- Ferrous sulphate, folic acid and multivitamin supplementation
- Tetanus toxoid immunisation
- Cotrimoxazole Preventative Therapy (CPT)

Healthcare workers in RCH settings should be able to assess and recognise early the signs and symptoms of the other common OIs so that they can refer clients to appropriate care:

- PCP
- Candidiasis
- Herpes zoster
- Kaposi sarcoma
- Lymphoma

- Toxoplasmosis
- Cryptococcal meningitis

Practice Point

When a client with unknown HIV status presents with signs and symptoms of an OI, they should be tested for HIV as soon as possible and referred to a CTC if HIV

Women living with HIV should receive information about ways to prevent OIs and other common HIV-related infections. Such measures include the following:

- Maintaining good hygiene in food storage and preparation
- Taking medications that prevent infections such as CPT to prevent PCP, toxoplasmosis and some bacterial infections or sulfadoxine-pyrimethamine for prevention of malaria in pregnant women who are not eligible for CPT
- Cleaning the body well to avoid skin infections
- Maintaining good oral care and hygiene
- Using condoms, which can help prevent the spread of HIV and other STIs
- Getting enough rest

For detailed information on the diagnosis and management of HIV-related disease, refer to *Tanzania's National Guidelines for the Management of HIV and AIDS*. Prophylaxis for pneumocystis pneumonia (PCP), tuberculosis (TB) and malaria are discussed below.

Cotrimoxazole preventive therapy (CPT)

Cotrimoxazole preventive therapy (CPT) is effective prophylaxis for PCP and for other infections. Guidelines for the use of CPT are as follows:

- All pregnant women living with HIV should be given CPT regardless of WHO clinical stage or CD4 count.
- CPT should be initiated as early as 14 weeks of gestation
- Women receiving CPT who become pregnant should continue CPT throughout pregnancy. Ensure they receive Folic acid as part of their comprehensive antenatal care.
- Pregnant women who are receiving CPT do not need intermittent presumptive treatment for malaria.
- Non-pregnant women should receive CPT according to the National Guidelines for the Clinical Management of HIV and AIDS (2009). CPT prevents PCP, malaria and toxoplasmosis.

Table 7.2: Cotrimoxazole Preventative Therapy (CPT) Dosing

Cotrimoxazole Preventative Therapy (CPT) Dosing
960mg once daily (either as 1 double-strength tablet or two single-strength tablets of 480mg)

Managing side effects

- Cotrimoxazole should not be administered to clients with a history of allergy to sulpha-containing medications.
- Healthcare workers should monitor clients receiving CPT closely for side effects and for rare adverse events such as severe skin reactions (severe rash or Stevens-Johnson syndrome), renal and hepatic insufficiency and haematologic toxicity.
- HCW should fill in the adverse drug reaction form in the event of side effects (See *Appendix 9-B: Adverse Drug Reaction Reporting Form*).
- CPT should be stopped if the patient develops significant side effects and replaced with dapsone 100 mg daily.

Pneumocystis pneumonia (PCP)

Pneumocystis pneumonia (PCP) is common in Tanzania, especially among HIV-infected children. Patients with PCP usually present with a non-productive cough, fever, chest tightness and shortness of breath that has evolved over two to four weeks. Chest signs may be minimal despite shortness of breath.

Tuberculosis (TB)

TB and HIV are overlapping epidemics. A person infected with HIV is ten times more likely than a person who is HIV negative to develop TB. The questionnaire shown in Table 7.3 below should be used at every visit to screen for signs and symptoms of TB disease:

- If YES to one or more questions, follow TB diagnostic flow chart
- If NO to all questions: stop TB investigations and repeat screening at the subsequent visit

Table 7.3: Recommended TB Screening Questionnaire (adults and adolescents)

Questions:	Yes	No
Has the individual had a cough for ≥2 weeks?		
Has the individual coughed up blood-stained sputum (haemoptysis)?		
Has the individual had a fever for ≥2 weeks?		
Has the individual noticed weight loss (new patients) or a three kg weight loss in a month (in a subsequent visit)?		
Has the individual had excessive sweating at night ≥2 weeks?		

Isoniazid Preventive Therapy (IPT)

Isoniazid preventive therapy (IPT) is an intervention that should be part of the package of care for people living with HIV. IPT is given to individuals with latent TB infection to prevent progression to active disease. IPT has been shown to reduce the risk of developing TB disease by at least 60%; the protective effect of IPT is expected to last for 18 months. However, IPT should only be offered in the following situations:

- Where quality supportive counselling is available

- After effective screening for active TB
- Where there is capacity for follow up and monitoring of patients to encourage adherence to IPT
- Where there is capacity to manage side effects and exclude active TB during IPT

Eligibility for IPT

For clients with no history of TB treatment:

- All clients living with HIV with no signs or symptoms of active TB are eligible for IPT.

For clients with history of TB treatment:

- Clients who had active tuberculosis in the past 2 years should not be considered for IPT. Clients who were treated for TB more than 2 years earlier may be considered because they may have already been re-infected with TB.
- Clients who receive IPT may also initiate ART, if eligible, as there is no interaction between Isoniazid and the current ART regimen.

IPT dosage

IPT is given at a dosage of 300 mg daily for 6 months for adults. As the medication is given for a full 6 months, it is important that HCWs in RCH services are prepared to provide counselling and support around adherence for IPT, whether it was prescribed at the CTC or in RCH.

Practice Points

- Clients who have symptoms suggestive of TB should be referred for a chest x-ray, clinical evaluation and sputum examination.
- Pregnant women living with HIV who have TB should be referred immediately for TB treatment and HIV care and treatment assessment at a CTC.
- The prevention of TB and the treatment of confirmed active TB should follow national guidelines.

Malaria

Preventing malaria during pregnancy is very important, because malarial infection has negative consequences on the health of mothers and infants. Infants born to women with HIV and malaria have a higher risk of HIV-infection and are more likely to have low birth weight and more likely to die during infancy. Malarial infection is often asymptomatic: however, clients may have symptomatic periods that resolve and then recur.

Practice Point

Referral for evaluation of malaria should be considered in any patient presenting with the following symptoms:

- Fever
- Chills
- Mental confusion
- Diarrhoea, nausea and vomiting
- Body malaise
- Muscle aches or joint pains
- Enlarged spleen
- Abdominal pain
- Loss of appetite

All women should receive information about use of insecticide-treated bed nets and eliminating possible mosquito breeding places in and around the home. CPT protects against malaria and other infections and therefore all pregnant women with HIV should initiate CPT as earlier as 14 weeks of gestation.

7.5 Reproductive health and family planning

Family planning and safer sex counselling

During postpartum visits, HCWs should counsel the patient about the various family planning methods, relating them to the patient's particular situation and needs. This information should be offered in an accurate and unbiased manner. Partners should be involved in family planning counselling whenever possible.

When counselling women in family planning, it is important to remember that all clients have:

- The right to decide whether to practise family planning
- The freedom to choose which method to use
- The right to privacy and confidentiality
- The right to refuse any type of examination

During the counselling session, HCWs should:

- Discuss condom use as part of a dual protection against HIV, other STIs and unplanned pregnancy.
- Discuss the importance of safer sex to prevent the spread of HIV and other STIs.
- Support the mother's choice of contraceptive method.
- Give the mother advice on how to recognise symptoms of STI and where to go for STI assessment and treatment.
- Answer any questions the woman may have about safer sex behaviours.

Practice Point

All mothers should be counselled to start using some form of contraception within six weeks of delivery.

Lactation amenorrhea method (LAM) is a temporary contraceptive method that should only be used by women who:

- Are less than 6 months postpartum
- Are exclusively breastfeeding, and
- Have not resumed menstruating.

Women who meet all three of these criteria have only a 1% to 2% chance of getting pregnant. However, because the effectiveness of LAM diminishes over time, it is important to help women plan ahead and choose a new family planning method before it is needed (i.e. before 6 months postpartum).

Most methods of contraception are safe and effective in women living with HIV.

- Condoms serve as dual protection. They prevent not only pregnancy, but also most STIs and further transmission of HIV.
- Lactation amenorrhea method (LAM) is a temporary contraceptive method that should only be used by women who:
  - Are less than 6 months postpartum
  - Are exclusively breastfeeding, and
  - Have not resumed menstruating.
- Hormonal contraceptives: Women who are infected with HIV or at high risk of HIV can safely use all forms of hormonal contraceptives; however:
  - Combined oral contraceptives are contraindicated for women who are breastfeeding. The efficacy of COCs may interact ART in a way that could reduce their efficacy in preventing pregnancy. Rifampicin can also reduce the efficacy of COCs. Condoms should be recommended as a back-up to prevent unplanned pregnancy in women on ART and/or rifampicin.
  - Injectables (such as Depo-Provera/DMPA) are a good alternative for women on ART because they do not interact with ARVs.
  - Progestin-only pills (POPs) contain very low doses of a progestin but do not contain oestrogen. POPs are a good choice for breastfeeding women because they do not reduce the mother's milk supply.
- IUDs can be used successfully in HIV infected women on ART and in asymptomatic or mildly symptomatic women; IUDs should not be used by women with advanced HIV who are not on ART. If the IUD has not been inserted within 48 hours of delivery, insertion should be delayed to 4 or more weeks after birth. (From 48 hours to four weeks postpartum, the uterus is undergoing involution following pregnancy; during this time, complications with insertion, including infection and uterine perforation, are more likely.
- Voluntary sterilisation by tubal ligation or vasectomy is a permanent method of birth control and an excellent method for women who decide that they do not want more children. A bilateral tubal ligation is most easily conducted 0–48 hours post childbirth; but in order to assure that the woman has adequate time to learn about the procedure and to

make an informed decision, discussion should begin antenatally. There is no medical reason to deny sterilisation to HIV infected women nor is there any indication to sterilise HIV infected women.

- Spermicides (foams, gels, creams or suppositories/tablets that contain chemicals that immobilise or destroy sperm and reduce the risk of pregnancy) should **not** be used by HIV infected women due to enhanced risk of HIV trans
- Fertility awareness-based methods are difficult and unreliable in women with AIDS or on ART due to changes in menstrual cycle.

Cervical Cancer Screening

Women living with HIV are at greater risk for developing cervical cancer. Women living with HIV have higher rates of:

- Co-infection with human papillomavirus (HPV)
- Persistent HPV infection
- Larger precancerous lesions that are more difficult to treat
- Recurrence of precancerous lesions following treatment
- Rapidly progressive cervical cancer

Cervical cancer screening should therefore be integrated as part of routine care for HIV-positive women. Annual screening using visual inspection with acetic acid (VIA) or rapid HPV testing is recommended. Screening should be initiated at HIV diagnosis, regardless of age, once sexually exposed. Refer to the *Tanzania Service Delivery Guidelines for Cervical Cancer Prevention and Control* for detailed information and guidance.

7.6 Nutritional counselling and support

Nutritional counselling is an important part of postpartum care, and nutrition should be monitored and discussed during all postpartum visits. During these visits, HCWs should review the mother's nutritional requirements, asking whether she is getting enough food and liquids and counselling her about nutritious, locally available foods. The importance of cleanliness during food preparation and storage to prevent bacterial infections should be emphasised, and women should be encouraged to abstain from harmful habits such as smoking, alcohol and drug use.

Women living with HIV who are receiving ART along with other medications may need additional nutritional counselling to manage side effects and to prevent nutrition-related complications.

During the postpartum visits, HCWs should also assess the extent of family support for the chosen infant feeding option and monitor how well infant feeding is progressing.

7.7 Psychological care and support services

Women living with HIV often require on-going psychosocial care and support services. Because people with HIV face stigma in many communities, women living with HIV are often reluctant to disclose their HIV status to partners, family members or friends. Moreover, a woman who has learned her HIV status during antenatal HIV testing may still be adjusting to her HIV-positive status during the postpartum period and may be anxious about the health of her child or children. Regular monitoring of mental health and psychological support needs is critical at all stages of HIV infection.

The following services should be offered to women living with HIV directly or by referral:

- Support and counselling to help women come to terms with their diagnoses and to disclose their HIV status to their partners and families
- Peer (Mother's Support Group) counselling and support from health agencies or NGOs
- Counselling and support for the mother and family to help them cope with the uncertainty of their child's HIV status
- Community support, including referrals to community-based and faith-based programmes

7.8 Care and support of HIV-exposed infants

HIV-exposed infants must be followed up closely in order to provide important interventions that reduce the risk of MTCT and promote the health of the infant, mother and family. It is critical to establish the HIV status of the infant as early as possible to allow early initiation of ART, as it has shown to reduce morbidity and mortality of HIV-infected infants.

The goals of care for all HIV-exposed infants are to:

- Minimise the risk of MTCT
- Establish HIV status (early infant diagnosis)
- Prevent opportunistic infections (OIs)
- Optimise safer infant feeding
- Optimise growth and development
- Provide routine care (e.g., immunisations, vitamin A)
- Conduct routine screening for tuberculosis
- Monitor for signs and symptoms of HIV
- Ensure access to care, treatment and psychosocial support for the infant, mother and family

The HIV-exposed newborn should be seen in the healthcare facility as soon as possible after delivery so that ARV prophylaxis may be initiated and infant feeding can be assessed and supported. ARV prophylaxis should be initiated within six to twelve hours of birth or as soon as possible thereafter.

Follow-up visits for all infants should cover the routine care summarised in Table 7.4 and should be scheduled to coincide with the recommended immunisation schedule indicated on the *Road to Health* card.

Table 7.4: Specific components of follow-up care for HIV-exposed infants and their mothers

Infant	
History and Physical Examination	▪ Conduct a history and physical examination. Follow Integrated Management of Childhood Illness (IMCI) guidelines, to assess and classify the sick child.
ARV prophylaxis	▪ Assess the status of infant ARV prophylaxis and determine if prophylaxis should be continued or stopped according to national guidelines. Assess adherence.
Developmental Assessment	▪ Perform a developmental assessment. See *Appendix 7-A: Paediatric Developmental Assessment Tool* for detailed information.
Growth assessment	▪ Weigh the infant and measure length or height. Plot the infant's weight on its *Road to Health* card and interpret the curve.
Lab tests	▪ Provide virologic and/or antibody testing according to national guidelines and the national testing algorithm. Detailed information on infant HIV testing and counselling is described in *Chapter 4: HIV Testing and Counselling.* ▪ If the child's HIV test has been performed and the result is available, classify the child's HIV test and provide post-test counselling.
CPT	▪ Provide CPT to all HIV-exposed infants from six weeks of age. – CPT can be stopped if the child is determined to be HIV-uninfected and is no longer breastfeeding. (See details in this module and in *Appendix 7B: Cotrimoxazole Preventive Therapy in Children.)*
Immunisations	▪ Immunise according to national guidelines.
Infant feeding	▪ Provide counselling related to infant feeding and assess nutritional intake/status. Detailed information is provided in *Chapter 6: Infant Feeding in the Context of HIV.*
Vitamin A	▪ Provide vitamin A starting at age six to nine months if infant is breastfed; continue to give every six months. ▪ Start vitamin A at age six weeks if the infant is formula fed. Continue to give every six months.
Tuberculosis	▪ Screen for signs or symptoms of TB and ask if contacts within household have TB disease. Follow national guidelines for assessment and treatment.
Malaria	▪ Recommend the use of insecticide-treated bed nets to prevent malaria.

Infant ARV prophylaxis

All HIV-exposed infants are eligible for and should receive ARV prophylaxis for PMTCT. The recommended ARV prophylaxis is the same for all HIV-exposed infants, regardless of the mode of infant feeding or maternal HIV treatment. The duration of prophylaxis for the all HIV-exposed infants is from birth to six weeks of age. Mothers should be encouraged and supported to adhere to treatment; counselling should be provided to explain the expected duration of infant ARV prophylaxis and the expected follow-up schedule for infant HIV testing. See *Chapter 5: Specific Interventions to Prevent MTCT for detailed information on infant prophylaxis*.

Practice Point

- HIV-exposed infants should receive NVP syrup immediately after birth (or as soon as possible thereafter) and continue until six weeks of age.
  - NVP prophylaxis may be initiated at any time between birth and four weeks of age for infants who present late. Prophylaxis is most effective if started at birth.
  - NVP prophylaxis should stop at six weeks of age for all infants, even if started late.

Early infant diagnosis of HIV infection

It is crucial to identify infants who are infected with HIV as early as possible — ideally in infancy — to prevent death, illness and delays in growth and developmental. HIV testing and counselling in infants and children is described in *Chapter 4: HIV Testing and Counselling*. Children with HIV infection should begin ART as soon as possible to prevent or limit disease progression.

Practice Points

- It is crucial that HCWs properly record information related to HIV status on the mother's RCH card and on the child's Road to Health card.
- HIV-exposure status must be documented for every infant seen at the Under 5 clinic.
- If the HIV-exposure status of the infant is not documented, the HCW must determine if the mother and/or infant have undergone HIV testing and counselling (HTC). If HTC has not been performed or if test results cannot be determined, HTC should be provided.

Cotrimoxazole preventive therapy (CPT)

HIV-exposed infants should receive prophylaxis against PCP and other opportunistic infections using CPT, beginning at 4 weeks of age (or at first encounter with the healthcare system if the child was not seen within 4 to 6 weeks of delivery).

CPT should be continued until HIV infection is excluded. For breastfeeding infants, HIV infection cannot be excluded until six weeks after complete cessation of breastfeeding. See

APPENDIX 7-B: Cotrimoxazole Preventive Therapy in Children and Table 7.5 below for additional information.

Table 7.5: Cotrimoxazole formulation and dosage for HIV-infected or HIV-exposed children

Recommended Daily Dosage	Suspension (5 Ml Syrup [200 Mg/40 Mg])	Paediatric Tablet (100 Mg/20 Mg)	Single-Strength Adult Tablet (400 Mg/80 Mg)	Double-Strength Adult Tablet (800 Mg/160 Mg)
<6 months 100 mg SMX/ 20 mg TMP	2.5ml	One tablet	¼ tablet, possibly mixed with feeding	—
6 months – 5 years 200mg SMX/ 40 mg TMP	5 ml	Two tablets	Half tablet	—
6 –14 years 400 mg SMX/ 80 mg TMP	10 ml	Four tablets	One tablet	Half tablet
>14 years 800 mg SMX/ 160 mg TMP	—	—	Two tablets	One tablet
Frequency: once a day				

Source: *WHO, Guidelines on Cotrimoxazole Prophylaxis for HIV-related Infections among Children, Adolescents and Adults: Recommendations for a public health approach*. Available at: http://www.who.int/hiv/pub/guidelines/ctx/en/index.html

Assessment of HIV-specific and non-specific symptoms of illness

Healthcare workers should teach mothers and other caregivers to recognise early signs and symptoms that may indicate HIV infection and to seek care urgently for sick children whose HIV status is unknown. Healthcare workers should strongly encourage mothers and families living with HIV to adhere to all infant follow-up appointments and to seek medical help when the child becomes ill or if the mother suspects a problem.

Table 7.6: Clinical conditions or signs of HIV infection in a child who is HIV-exposed

Signs and conditions	Is symptom specific to HIV?
▪ Chronic, recurrent otitis media with discharge ▪ Persistent or recurrent diarrhoea ▪ Failure to thrive (slow growth) ▪ TB	Common in children who are HIV infected; also seen uninfected children
▪ Severe bacterial infections, particularly if recurrent ▪ Persistent or recurrent oral thrush ▪ Chronic parotiditis (swelling of the parotid gland, often painless	Common in children who are HIV infected; uncommon in uninfected children

Signs and conditions	Is symptom specific to HIV?
▪ Generalised persistent non-inguinal lymphadenopathy in two or more sites ▪ Hepatosplenomegaly (enlargement of the liver and spleen) ▪ Persistent or recurrent fever ▪ Delay or regression of developmental milestones ▪ Neurologic abnormalities ▪ Herpes zoster (shingles), single dermatome ▪ Persistent generalised dermatitis unresponsive to treatment	
▪ PCP ▪ Oesophageal candidiasis ▪ Lymphoid interstitial pneumonitis ▪ Herpes zoster (shingles) with multi-dermatome involvement ▪ Kaposi sarcoma	Specific to HIV infection

Presumptive diagnosis of HIV infection in children

If an infant is <18 months old and has symptoms that are suggestive of HIV infection, and virologic testing is not available, it is possible to make a presumptive diagnosis of HIV infection for the purposes of starting ART.

- Infants <18 months of age can be diagnosed with HIV on the basis of symptoms and a positive antibody test. Nonetheless, a DBS sample should be collected and sent for DNA-PCR while initiating ART and treating opportunistic infections. In infants that are strongly suspected of having HIV, treatment should not be delayed while waiting for the PCR results.
- The use of symptoms to guide diagnosis of HIV should be followed by efforts to confirm the diagnosis with the best available tests for the infant's age.
- If the child is at least 18 months old and is no longer breastfeeding, an antibody test should be used to diagnose HIV infection.

Other factors supporting the diagnosis of HIV disease in an HIV-seropositive infant include:

- Recent HIV-related maternal death or advanced AIDS in the mother
- Recent HIV-related death of a sibling less than 10 years
- If available, a CD4 percentage of less than 20%

Practice Points

- Presumptive diagnosis of HIV infection should be made if the child:
- Has a confirmed positive HIV antibody test[a], AND
- Has a diagnosis of any AIDS-indicating condition[b], OR
- Is symptomatic with two or more of the following:
  - Oral thrush[c]
  - Severe pneumonia[c]
  - Severe sepsis[c]
-

a. Although HIV antibody tests are difficult to interpret for children under the age of 18 months, when accompanied by the other symptoms listed here, the antibody test can be used to form the presumptive diagnosis of HIV.
b. AIDS-indicating conditions include some but not all HIV WHO Paediatric Clinical Stage 4 indicators, such as PCP, oesophageal candidiasis, cryptococcal meningitis, cerebral toxoplasmosis, HIV wasting and Kaposi sarcoma.
c. As defined by the Integrated Management of Childhood Illness.

7.9 Support for families with HIV-exposed and HIV-infected infants or children

The suspicion or confirmation of HIV diagnosis in an infant or child is difficult for parents and family members. Healthcare workers should discuss the diagnosis compassionately and confidentially and offer information about services available for the child. HCWs should establish a link with community health workers in the support and tracing exposed/infected infants in case of loss-to-follow-up.

Additional areas for which HCWs should make assessments and appropriate referrals include:

- Nutritional support
- Educational support
- Faith-based support
- Home-based care
- Psychosocial support
- Financial support
- Transportation

Orphan care (care for child if a parent becomes severely ill, is incapacitated or dies)

7.10 Care of HIV-Infected Infants

HIV-infected children should receive routine paediatric care and should be monitored for HIV disease progression. All HIV-infected infants and under-five children should be started on ART regardless of WHO clinical staging or CD4 percentage. See *Appendix 7-C: WHO Clinical Staging of HIV/AIDS for Children with Confirmed HIV Infection* for a detail description of WHO clinical stages in children.

At each visit, HCWs should perform a complete physical examination, paying particular attention to signs commonly associated with HIV infection. Growth and development should

be evaluated and charted at all stages of development through adolescence; growth faltering, developmental delay or failure to achieve or loss of developmental milestones may indicate HIV disease progression.

ART for HIV-infected children

All HIV infected infants and under-five children should be initiated on ART irrespective of their CD4 count. HCWs must monitor older children for symptoms of HIV infection that would make them candidates for ART. The national guidelines contain detailed clinical and social criteria for initiating ART in children.

All children with confirmed or presumptive HIV infection should be referred for HIV treatment either in the RCH facility or to a CTC. Whenever possible, the infant should receive HIV care and treatment in the same facility as his/her mother.. Presumptive diagnoses of HIV infection should be confirmed with antibody tests at 18 months of age (and when breastfeeding cessation can be verified) at facilities where DNA PCR is not available. Only children with confirmed HIV infection should continue ART.

The first-line ARV regimens for children are outlined below and also in *APPENDIX 7-A: Cotrimoxazole Preventive Therapy in Children*. Paediatric dosages have to be adjusted frequently for growth. Healthcare workers should assess the child's growth, adherence and the tolerance to the ARV regimen at every visit and adjust the dosages accordingly.

For the WHO clinical staging of infants and children, see *APPENDIX 7-C: WHO Clinical Staging of HIV/AIDS for Children with Confirmed HIV Infection.*

Eligibility criteria for ART for infants and children:

- All HIV-infected children less than 24 months of age, regardless of CD4 percentage or clinical stage
- All HIV-infected children 24 months to five years of age with confirmed HIV infection:
  - WHO paediatric clinical stage 3 or 4 regardless of CD4 percentage, OR
  - WHO paediatric clinical stage 1 or 2 if CD4 percentage <25%

Practice Points

The preferred first-line treatment options for children are:

- Zidovudine (AZT) + Lamivudine (3TC) + Nevirapine (NVP) for children <3 years
- Zidovudine (AZT) + Lamivudine (3TC) + Efavirenz (EFV) or Nevirapine (NVP) for children ≥3 years old and ≥ 10kg body weight
- Abacavir (ABC) + Lamivudine (3TC) + Efavirenz (EFV) for children ≥3 years and ≥ 10kg body weight or Nevirapine (NVP) for children <3 years and ≥ 10kg body weight
- Stavudine (d4T) + Lamivudine (3TC) + Nevirapine (NVP) and Zidovudine (AZT) + Lamivudine (3TC) + Nevirapine (NVP) available also as FDC for children

Stavudine (d4T) is an alternate for AZT in cases of anaemia (i.e., haemoglobin <7.5g/dL) available as FDC tablets even for very young children. Note that single d4T in liquid

formulation needs refrigeration. Unless clinically indicated, d4T-containing regimens should be avoided for new ART initiations because of the potential risk of long-term toxicity.

7.11 Home-based care and palliative care

Women living with HIV and their families have a variety of needs beyond the clinical needs addressed at the healthcare facility. Community Home Based Care programmes (CHBC) play a key role in treatment advocacy, information and literacy as well as monitoring and support to patients and their families. Home-based care is a mechanism of palliative care provision that includes various components, including physical care, nutrition care, and emotional, social spiritual, legal and economic support.

In order to effectively ensure networking and link patients across a continuum of care services, an inventory or directory of service-providing organisations in the local community or district needs to be available at all clinics and programmes. In addition, regular coordination is needed between the CHBC programmes, the community and district health authorities and the health facility staff.

Palliative care

Home-based care also includes palliative care. The purpose of palliative care is to:

- Provide comfort and enhance the quality of life
- Provide relief from pain and other distressing symptoms
- Integrate psychological and spiritual aspects of patients care
- Offer a support system for patients and families

Palliative care is not limited to patients in the terminal stages of disease; many aspects of palliative care, such as pain and symptom management are applicable early in the course of illness. Patients or their caregivers can be trained to effectively manage proscribed palliative medications and other symptom management strategies.

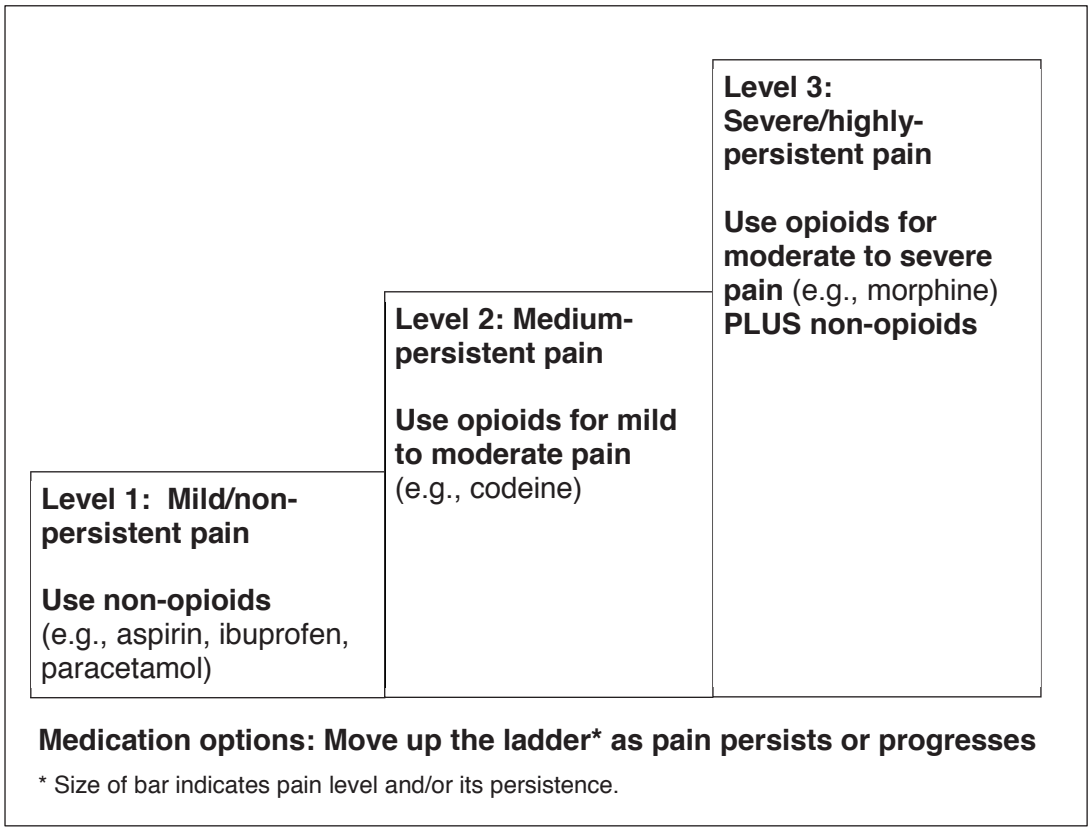
Pain

Acute pain should be evaluated so that its cause can be determined and treated. A patient with a new onset of moderate or severe pain should be referred for evaluation.

Chronic pain should be treated on a regular basis. The pain control “ladder” is shown in Figure 7.1 below.

Initially use non-opioids such as aspirin, paracetamol or ibuprofen. The next level of treatment for pain control is with a mild opioid such as codeine. If this still does not control pain, then a strong opioid such as oral morphine should be increased to levels that control pain.

Figure 7.1: Achieving pain control in persons with chronic pain



Source: *National Guidelines for the management of HIV and AIDS*. National AIDS Control Programme, Fourth Edition, February 2012.

CHAPTER 8: Safety and Supportive Care in the Work Setting

8.1 Standard Precautions

Standard Precautions are a simple set of effective practices designed to protect HCWs and clients from infection with a range of pathogens, including blood borne viruses. Standard Precautions create a physical, mechanical and/or chemical barrier between HCWs or clients and potentially infectious material.

Practice Points

Standard Precautions must be used when caring for all clients, regardless of diagnosis:

- Consider every person (patient or HCW) as potentially infectious and susceptible to infection.
- Use appropriate hand hygiene techniques.
- Wear protective gear, such as gloves and boots.
- Handle contaminated objects appropriately, including sharps (hypodermic and suture needles, scalpel blades, lancets, razors, scissors), patient care and resuscitation equipment, and linen.
- Ensure patients' environment is clean.
- Dispose of infectious waste materials safely, including sharps, to protect those who handle them and to prevent injury and the spread of infection to the community.
- Process instruments by decontamination, cleaning and then either sterilisation or high-level disinfection using national recommended procedures.
- Apply waterproof dressing to cover HCW cuts and abrasions.
- Clean spills, blood or other body fluids promptly and carefully.

8.2 Hand hygiene

Hand hygiene is a set of practices intended to prevent hand-borne infections by removing dirt and debris and inhibiting or killing microorganisms on the skin. Hand hygiene includes care of the hands, skin and nails.

Hand hygiene techniques minimise cross-contamination (e.g., between an HCW and a patient) and is one of the key components in minimising the spread of disease and maintaining an infection-free environment. Hand-washing with plain soap and clean running water is one of the most effective methods for preventing transmission of blood borne pathogens and limiting the spread of infection. There are three types of hand hygiene:

- Washing with soap and clean water
- Washing with an antiseptic agent and clean water
- Using alcohol-based rubs

Hand washing with soap and water or antiseptic agent:

- Wet hands and apply enough plain or antiseptic soap to cover hands.
- Rub all surfaces for at least 20 seconds — over front and back of hands and between fingers and finger tips.
- Rinse hands and dry thoroughly with a single-use towel.
- Use the towel to turn off faucet.

The entire procedure requires a total of 40–60 seconds.

Alcohol-based hand rubs

- Apply a palmful of the product and cover all surfaces of the hand.
- Rub hands together (front, back, between fingers and finger tips) until hands are dry.

The entire procedure requires a total of 20–30 seconds.

Table 8.1: Your 5 moments for hand hygiene

Before touching a client	When?	Clean your hands before touching a client when approaching him/her.
	Why?	To protect the client against harmful germs carried on your hands
Before clean/aseptic procedure	When?	Clean your hands immediately before performing a clean/aseptic procedure.
	Why?	To protect the client against harmful germs, including the client's own, from entering his/her body
After body fluid exposure risk	When?	Clean your hands immediately after an exposure risk to body fluids and after glove removal.
	Why?	To protect yourself, other clients and the healthcare environment from harmful germs
After touching a client	When?	When leaving a patient's side, clean your hands after touching the patient and before touching an object or another patient.
	Why?	To minimise the spread of germs to yourself, other clients, and the healthcare environment
After touching client surroundings	When?	Even if you didn't touch the client, clean your hands after touching an object or furniture in the client's immediate surroundings.
	Why?	Because touching objects in the patient environment is associated with hand contamination, hand hygiene is required to minimise risk of spreading germs to you, other clients and the healthcare environment

Sources: WHO, 2009, *WHO Guidelines on Hand Hygiene in Health Care, First Global Patient Safety Challenge, Clean Care is Safer Care.* See also: WHO, 2011, *Clean Care is Safer Care. Guidelines, educational materials, videos and job aids available at:* http://www.who.int/gpsc/en/

8.3 Personal protective gear

Personal protective gear safeguards clients and HCWs:

Gloves

The use of a separate pair of gloves for each patient helps prevent the person-to-person transmission of infection. Gloves are not required for routine patient care activities in which contact is limited to a patient's intact skin. Healthcare workers should use gloves when:

- Contact with blood, other body fluids, mucous membranes or broken or cut skin is anticipated
- Handling items contaminated with blood, other body fluids or secretions
- Performing activities such as mopping, hospital bed-making
- Handling healthcare waste (use utility gloves in these situations)
- The HCW has skin lesions on the hand
- Performing surgical procedures or vaginal examination (use sterile gloves in these situations)

Aprons

Rubber or plastic aprons provide a protective waterproof barrier along the front of the HCW.

Protective eyewear

Eyewear, such as plastic goggles, safety glasses, face shields and visors, protects the eyes from accidental splashes of blood or other body fluids. Eyewear is used during labour and delivery and during operation procedures.

Boots

Rubber boots or leather shoes provide extra protection to the feet from injury by sharps or heavy items that may accidentally fall. They must be kept clean. Healthcare workers should avoid wearing sandals or shoes made of soft materials.

8.4 Handling of sharps, contaminated equipment and other materials

Handling and disposal of sharps

Most HIV transmission to HCWs in work settings is the result of a skin puncture with contaminated needles or sharps. These injuries occur when sharps are recapped, cleaned or inappropriately discarded.

Practice Points

- Use a sterile syringe and needle for each injection, including reconstitution of medications.
- Use single-use needles and syringes.
- Avoid recapping and performing other manipulations of needles by hand. If recapping is necessary – for example, after drawing blood from a Vacutainer or blood gas – use the single-hand scoop technique.
- Collect used syringes and needles at the point of use in a sharps container that is puncture- and leak-proof and that can be sealed before completely full.
- Dispose of the sharps container by incineration, burial or encapsulation.
- Handle all laboratory specimens with care and wear gloves whenever performing a laboratory procedure.
- Use holders for all blades.
- Use a hands-free technique when passing sharp instruments during surgical procedures.
- Always point the sharp away from oneself and others.
- Pick up sharps one at a time; never pass handfuls of sharps or needles.

Sharps containers

Using sharps disposal containers helps prevent injuries from disposable sharps. Sharps containers should be fitted with a cover, and should be puncture-proof, leak-proof and tamper-proof. Sharps containers are also known as safety boxes, and are usually yellow in colour.

Practice Points

- All sharps containers should be clearly marked “SHARPS” and, if possible, should have pictorial instructions for the use and disposal of the container.
- Place sharps containers away from high-traffic areas and within arm’s reach of where the sharps will be used.
- Do not place containers near light switches, overhead fans or thermostat controls where an HCW can accidentally put a hand into the container.
- Never reuse or recycle sharps containers (safety boxes) for other purposes such as a rubbish bin.
- Dispose of sharps containers when 3/4 full; do not fill beyond 3/4 capacity.
- Avoid shaking sharps containers to settle its contents to make room for more sharps.

To reduce risk in the labour and delivery setting:

- Cover broken skin or open wounds with watertight dressings.
- Wear suitable gloves when exposure to blood or other body fluids is likely.
- Wear sterile surgical gloves during vaginal delivery.
- Wear boots, a waterproof plastic apron, masks and protective eyewear during delivery.
- Pass all sharp instruments onto a tray, rather than hand to hand.
- Cover the infant's umbilical cord with gauze before cutting.
- Use elbow-length or gauntlet gloves during manual removal of the placenta.
- Use needle holders when suturing.
- When episiotomy is necessary, use an appropriate-size needle (21 gauge, 4 cm, curved) and needle holder during the repair.
- If blood splashes on skin, immediately wash the area with soap and water. If splashed in the eye, wash the eye with water only. If blood splashes on the floor, wash it away using chlorine.
- Dispose of solid waste (e.g., blood-soaked dressings and placentas) safely according to facility procedures.

Proper handling of soiled linen

Staff members who process linen should be appropriately trained and regularly supervised. Each facility will determine the best way to handle, process and store linens.

Practice Points

- Housekeeping and laundry personnel should wear utility gloves and other personal protective equipment as indicated when collecting, handling, transporting, sorting and washing soiled linen.
- When collecting and transporting soiled linen, HCWs should handle it as little as possible to avoid accidental injury and the spread of microorganisms.
- All cloth items used during a procedure (e.g., surgical drapes, gowns, wrappers) should be considered infectious.
- Linens must be laundered even if there is no visible contamination.
- Carry soiled linen in covered containers or plastic bags to prevent spills and splashes.
- Soiled linen should be kept in designated interim storage areas until transportation to the laundry.
- All linen should be carefully sorted in the laundry area before washing. Linen should not be pre-sorted or washed at the point of use.
- When hand washing soiled linen:
  - Use warm water if available.
  - Add bleach (0.5% chlorine) solution for 10 minutes to aid cleaning and bactericidal action.
  - If desirable, add soap (a mild acidic agent) to prevent yellowing of linen.
- Soiled patient linen should be decontaminated before returning it to the patient or relatives.
- Patients should be informed about decontamination of their clothing if it is necessary.
- Clean linen must be wrapped or covered during transport to avoid contamination.

Processing contaminated instruments and other items

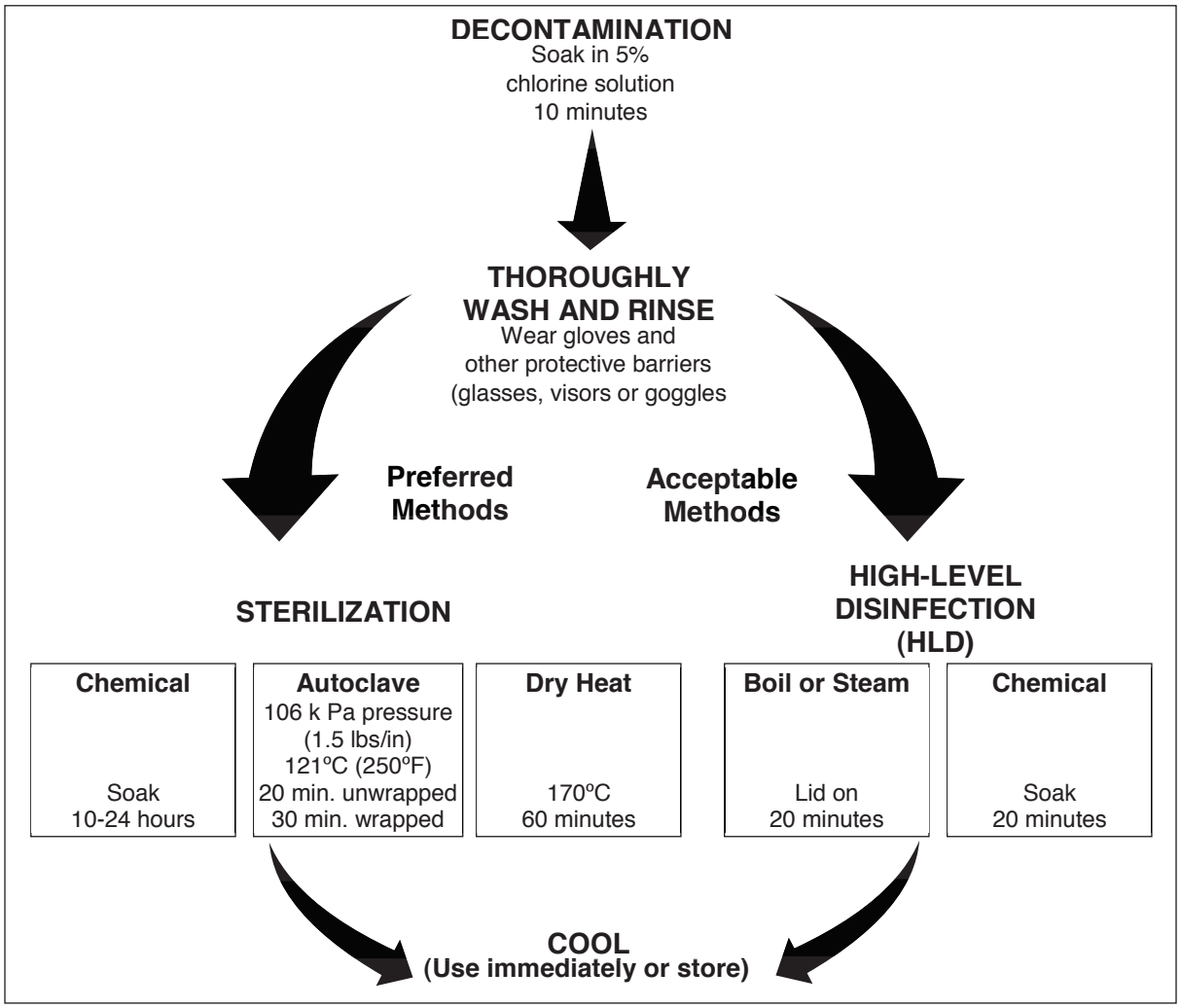
Instrument processing is one of the key components of Standard Precautions. There are 3 steps in processing soiled instruments and re-useable items:

- Decontamination
- Cleaning
- Sterilisation or high-level disinfection (HLD)

Decontamination is the first step in making equipment safer to handle. This requires a 10-minute soak in a 0.5% chlorine solution. This important step kills hepatitis B, hepatitis C, and HIV.

Cleaning is a process that physically removes all visible dust, soil, blood or other bloody fluids from objects. It consists of thoroughly washing with soap or detergent and water in addition to rinsing with clean water and drying.

Figure 8.1: Key steps in processing instruments and other items



HLD is a process that eliminates all microorganisms except some bacterial endospores from inanimate objects by boiling, steaming or using chemical disinfectants.

Sterilisation is a process that eliminates all microorganisms (bacteria, viruses, fungi and parasites) including bacterial endospores from objects by high-pressure steam (autoclave), dry heat (oven) or chemical sterilants.

8.5 Managing occupational exposure to HIV

Post-exposure prophylaxis

Post-exposure prophylaxis (PEP) is the immediate provision of medication following an exposure to potentially infected blood or other body fluids in order to minimise the risk of acquiring infection. This section will focus on HIV prophylaxis.

The risk of occupational exposure to HIV

The risk of acquiring HIV varies depending on the type of exposure. The risk after percutaneous injury is estimated to be 0.3%. The risk after a mucous membrane exposure is 0.09%. The risk for non-intact skin exposures is not known but is estimated to be lower than the risk for mucous membrane exposure.

Factors influencing the risk of acquiring HIV from an occupational exposure include the amount of blood or infectious fluid involved in the exposure, the patient's viral load and the duration of the exposure. For percutaneous injuries, the factors that influence risk include:

- The depth of the injury
- Whether the device was visibly contaminated with blood
- Whether the procedure involved placing a needle directly into an artery or vein
- Whether the needle was a hollow-bore needle or a solid needle (e.g., a suture needle)
- The size of the needle (large versus small gauge)

Steps in post-exposure management

Step 1: Administer first aid (exposure site management)

If occupational exposure to HIV occurs, HCWs should take immediate action:

- Apply first aid to reduce contact time with blood or body fluids.
- Immediately wash areas of the skin exposed to potentially infectious fluids with soap and water.
- Avoid milking the site. There is no advantage to bleeding the injury site.
- For an exposure to the eye, flush the exposed eye immediately with water or normal saline, if available.
- For an exposure to the mouth, spit out the fluid immediately, rinse mouth using water or saline and spit out again. Repeat process several times.
- Do not use caustic agents such as disinfectants on exposed areas.

Step 2: Report the exposure

The exposed HCW should report the accident to the immediate supervisor and to the person in charge of PEP. An injury report form should be filled out as soon as possible.

Step 3: Establish eligibility for PEP

The supervisor should conduct a risk assessment immediately after every occupational exposure no matter what time of day it occurs. The risk assessment determines the severity of the exposure and determines whether any immediate action is required. If the risk is assessed as "low risk", the HCW should complete an injury report form; no further action is required. The level of risk should be assessed by examining the factors outlined in Table 8.2.

Table 8.2: Risk assessment questions

Location of exposure	
Percutaneous	▪ How deep was the injury? ▪ What type of needle was used?
Mucosal	▪ What was the estimated volume of blood or bodily fluid on the mucosal surface?

Non-intact skin (e.g., bruised skin)	▪ What is the condition of the skin? ▪ How long was the skin in contact with the infected blood or bodily fluid?
Severity of exposure	
High-risk exposure	▪ Large quantity of blood: – Device visibly contaminated with source person's blood – Procedure involving needle placed directly into client's vein or artery – Deep injury ▪ Injury with hollow-bore needle ▪ High viral load in source person – Acute infection – Advanced HIV disease (AIDS)
Low-risk exposure	▪ Exposure to small volume of blood or blood contaminated with fluids from asymptomatic HIV-infected patient with low viral load ▪ Exposure following an injury with a solid or blunt needle ▪ Any superficial injury or mucocutaneous exposure
HIV status of source person	
The source person is HIV positive	▪ Initiate (or continue) PEP
The source person is HIV negative	▪ Stop the PEP regimen for the exposed person ▪ Perform follow-up HIV testing at 6 weeks and at 3 months for both the source and exposed person, as it is possible that the source person was in the window period when the exposure occurred
HIV status of healthcare worker	
Exposed HCW is HIV infected	▪ There is no need to continue (or initiate) PEP because a positive result would indicate that the HCW was infected with HIV before the incident ▪ The HIV-infected HCW should be referred to a CTC for evaluation while ensuring that confidentiality is maintained

Step 4: Prescribe and dispense PEP medications

If the exposure is assessed as "significant" and the HCW gives informed consent, the first dose of PEP with ARV medications should be given as soon as possible after the exposure. These medications should be prescribed by an experienced HCW in accordance with national or facility PEP guidelines.

ARV medications should be taken as soon as possible and no later than 72 hours after an exposure.

In order to determine the appropriate ARV prophylaxis regimen, a pregnancy test should be performed on all female HCWs of reproductive age if their pregnancy status is unknown. If possible, this should be done before initiating PEP. In addition, the following blood tests should be used to monitor PEP and the potential for ARV toxicity:

- Full blood count
- Liver function tests
- Renal function tests

An individual taking PEP may experience side effects of ARV medications including nausea, malaise, headache and/or anorexia. It is important that HCWs have access to a full month's supply of ARV medications once PEP has been started.

Step 5: Provide follow-up care and HIV testing, monitor and manage ARV toxicity

In addition to baseline testing, an HCW with occupational exposure should have repeat HIV testing at 6 weeks, 12 weeks and 6 months after the exposure. If the exposed HCW tests negative after 6 months, he or she is not infected with HIV.

Healthcare workers receiving PEP should be monitored for ARV drug toxicity. Full blood count, liver function tests and renal function tests should be repeated at 2 weeks.

Healthcare workers should be counselled about safer sex practices following the exposure until HIV infection can be ruled out at 6 months. Healthcare workers should be counselled on family planning methods and choosing a reliable form of contraception during this time period, preferably using dual protection with a condom. Anyone exposed to HIV should refrain from donating blood, plasma, organs, tissue or semen until infection can be ruled out.

ARV medications to be used for PEP

Because PEP needs to be initiated as soon as possible after an exposure, a minimum of 2 doses of ARV prophylaxis should be on hand and accessible at a facility at all times.

The recommended ARV regimen according to risk category is shown in Table 8.3.

Table 8.3 Recommended ARV regimen according to risk category

Risk category	ARV prophylaxis	Duration
Low risk	Zidovudine (AZT, ZDV) 300 mg twice a day **and** lamivudine (3TC) 150 mg twice a day (Use fixed-dose combinations of the above medications when possible[a])	28 days
High risk	AZT 300 mg twice a day **and** 3TC 150 mg twice a day[a] **and** efavirenz (EFV) 600 mg once nightly on an empty stomach *For pregnant women, replace EFV with LPV/r 133.33/33.3mg (3 capsules twice daily (BD)*	28 days

a. Fixed-dose combinations include Combivir or Duovir, one tablet twice a day.

Post-exposure prophylaxis is not indicated in the following scenarios:

- If the exposed person is HIV-positive from a previous exposure
- If the exposure does not pose a risk of transmission, that is ,after:
  - Exposure of intact skin to potentially infectious body fluid
  - Any exposure to non-infectious body fluid e.g. urine, saliva, faeces and sweat

Practice Points

- To ensure that PEP will be available to HCWs, facility supervisors should assign one person at the facility to be responsible for PEP, with a second trained and knowledgeable HCW as a backup.
- All staff, including cleaners and other nonclinical staff, should receive information about PEP and should know how to contact the second responsible HCW in charge of PEP when the person responsible for instituting PEP is off duty.
- The ARV medications used for PEP should always be accessible, not locked in a cabinet or room. It will be the responsibility of the facility supervisor to put systems in place that guarantee confidentiality of HIV test results following an exposure.

8.6 Supportive care for the caregiver

Characteristics of burnout

Burnout is a psychological syndrome characterised by overwhelming exhaustion, feelings of cynicism and detachment from the job, decreased productivity and a sense of ineffectiveness. Burnout stems from extended exposure to intense job-related stress and strain. Healthcare workers who provide on-going care to pregnant women living with HIV and their infants are vulnerable to burnout.

Table 8.4: Risks, signs and symptoms of burnout

Job-related risks for burnout	Personal risks for burnout
▪ Work overload with limited or no breaks ▪ Long working hours ▪ Poorly structured work assignment (HCW not able to use skills effectively) ▪ Inadequate leadership and support ▪ Lack of job-specific training	▪ Unrealistic goals and job expectations ▪ Low self-esteem ▪ Anxiety ▪ Personal attachment to clients with a fatal disease
Behavioural signs and symptoms	**Physical signs and symptoms**
▪ Frequent changes in mood ▪ Eating too much or too little ▪ Excessive alcohol use or smoking ▪ Becoming “accident prone”	▪ High blood pressure ▪ Palpitations, trembling ▪ Dry mouth, sweating ▪ Stomach upset

Psychological Signs and Symptoms	Physical and Occupational Signs and Symptoms
▪ Unable to make decisions ▪ Forgetful, poor concentration ▪ Sensitivity to criticism	▪ Taking more days off ▪ Arguing with co-workers ▪ Working more hours but getting less done ▪ Having low energy, being less motivated

Practice Point

Strategies for minimising burnout include seeking support from others and taking time for relaxation, engaging in restorative activities such as reading and exercising and spending time with family and friends.

8.7 Creating a safer work environment

Reducing occupational risk and minimising of burnout are on-going processes that involve:

- Assessing risks in the work setting
- Exploring different strategies for meeting resource needs, including the adequate supply of personal protective equipment and ARV medications
- Maintaining an optimal workload by developing strategies to attain and maintain appropriate staffing levels
- Implementing supportive measures that reduce staff stress, isolation and burnout
- Acknowledging and addressing the many needs of HCWs who are HIV infected Orienting new staff to infection prevention and control procedures and providing on-going staff education and supervision
- Developing standards and guidelines that address safety, risk reduction, PEP follow-up and first aid

Proper planning and management of supplies and other resources are essential in reducing the occupational risks of HIV infection. Examples of how supervisors or managers of facilities can create a safe work environment include:

- Providing appropriate hand washing facilities and other hand hygiene methods.
- Providing and using appropriate disinfectants to clean up spills involving blood or other body fluids.
- Making puncture-resistant sharps containers widely available to HCWs.
- Establish and implement policies and procedures for reporting and treating occupational exposure to HIV.
- Ensure that that PEP is always available.
- Use proper housecleaning methods.

On-the-job training in infection prevention and control

Supervisors and managers of facilities are responsible for training HCWs in infection prevention and control. Healthcare workers need to be aware of the risks of exposure to blood borne pathogens and the tools available to avoid exposure. They should understand how blood borne pathogens, particularly HIV, hepatitis B and hepatitis C, are transmitted and

should be able to identify and anticipate situations in which they may be exposed to them. Healthcare workers will need training on how to use and handle patient care equipment, personal protective equipment and linens correctly. Supervisors should regularly observe and assess implementation of Standard Precautions (including safe work practices) in their facilities, correcting unsafe practices in a nonthreatening and supportive manner.

CHAPTER 9: PMTCT Programme Management, Monitoring, Evaluation and Supply Chain Management

As Tanzania continues to expand PMTCT services, there is a critical need to document PMTCT programme management and establish a nationwide PMTCT monitoring system in order to ensure proper management of resources and effective coordination of programme activities. Monitoring allows programme managers at the national, regional, district, and facility levels to identify gaps and improve PMTCT services. Implementing a standard national PMTCT management and information system reinforces best practices, eases the burden of data management and training, and allows comparisons among health facilities with PMTCT services.

9.1 Overview of the national PMTCT programme

The goal of the PMTCT programme is virtual elimination of MTCT of HIV by 2015. Virtual elimination is defined as a 90% reduction in estimated number of new infections in infants and an MTCT rate of less than 5%.

PMTCT as a targeted response

PMTCT is a targeted response within the Health Sector Strategy for HIV and AIDS (2008 – 2012). The MoHSW placed PMTCT in Intervention Area No. 2 under the thematic area of Prevention. The objectives of the Health Sector Strategy are to:

- Develop and implement a national, integrated, multi-year PMTCT and Paediatric HIV care scale-up plan.
- Strengthen the capacity of the PMTCT programme and ensure accountability for PMTCT scale-up by all stakeholders.
- Institutionalise provider-initiated HIV testing and counselling in RCH settings.
- Strengthen infant feeding and nutrition advice, counselling and support for women, their children and families in the context of PMTCT and Paediatric HIV care.
- Operationalize the integration of PMTCT, family planning and other RCH services.
- Empower and create linkages with communities.

The six strategic objectives of the PMTCT Programme are:

- To strengthen supportive policies, management and strengthen supply chain management for comprehensive PMTCT and paediatric care and treatment at all levels.
- To develop institutional and human resource capacity in comprehensive PMTCT and paediatric HIV care and treatment.
- To provide integrated and comprehensive PMTCT and paediatric HIV care and treatment services at all levels.
- To strengthen systems for monitoring and evaluation of PMTCT and paediatric care and treatment at all levels.
- To strengthen community awareness and involvement in the delivery of PMTCT and paediatric HIV care and treatment services.
- To strengthen health logistics to include comprehensive management of PMTCT commodities

The PMTCT programme is under the Reproductive and Child Health (RCH) Section. The Assistant Director of the RCH Section heads the RCH. There are 8 programs under the RCH Section.

1. Reproductive Cancers Unit
2. Expanded Program on Immunization (EPI)
3. Safe Motherhood Initiative (SMI)
4. Prevention of Mother to Child Transmission of HIV Programme (PMTCT)
5. Family Planning Program
6. Neonatal Child Health Unit (NCHU)
7. Gender Unit
8. Adolescent Health Unit (ADU)

The PMTCT programme targets women of reproductive age; pregnant women; breastfeeding women and their children, families and community. Services offered are:

- HIV testing and counselling for pregnant women in ANC
- Couple HIV testing and counselling
- Specific interventions to prevent MTCT, including maternal ART and infant ARV prophylaxis, safer delivery practices and counselling and support for safer infant-feeding
- HIV care and support – including ART –for mothers and children living with HIV infection
- Infant/child monitoring for proper growth and development
- Family planning services
- Early infant HIV testing and treatment

9.2 Management of the PMTCT programme

The PMTCT programme uses the national, regional, district, and facility levels of management in the health system. In addition, the referral hospitals are an extended arm of the government which provide technical oversight to health care services in their respective zones.

The National PMTCT Coordinator heads the PMTCT programme. The Regional/District Reproductive and Child Health Coordinators (RRCHCO/DRCHCO) are responsible for assisting the Regional and District Medical Officers to coordinate the implementation of the PMTCT programme.

Management at Regional level

Management of PMTCT services by the Regional Health Management Team (RHMT) has the following roles in PMTCT:

- Ensuring PMTCT services are integrated into CCHP
- Facilitating local adoption of national PMTCT policies, guidelines and standards
- Coordinating partner implementation
- Ensuring ownership and sustainability of the programme
- Coordinating HIV and AIDS health sector activities in the region
- Including PMTCT activity reports when reporting regional HIV activities
- Advocating for PMTCT services and supporting social mobilization
- Developing programme communication support

At the regional level, the RRCHCO and RACC are the co-opted members of the RHMT and are closely involved in overseeing PMTCT and HIV and AIDS issues in the region.

Management at the District level

The Council Health Management Team (CHMT) is responsible for spearheading and overseeing all health sector activities in the district, including HIV and AIDS interventions. PMTCT activities of the CHMT include:

- Planning for integration of PMTCT services
- Training PMTCT service providers
- Supervising PMTCT services (facility and community based)
- Ensuring the supply of HIV test kits, ARVs, medications for opportunistic infections, and infant feeding kits for PMTCT
- Deploying/retaining/replacing trained staff
- Receiving, processing, reviewing and providing feedback on PMTCT reports from facilities
- Coordinating HIV and AIDS health sector activities in the district

- Including PMTCT activity reports when reporting for the district AIDS activities
- Developing programme communication support
- Collaborating with other PMTCT, HIV and AIDS caregiving resources

Likewise, for the district, the DRCHCO and DACC who are the co-opted members of the CHMT are also closely involved in overseeing PMTCT and HIV AND AIDS issues in the district.

Management at facility level

The facility management team is customarily comprised of the Facility-in-Charge; ANC-in-Charge; Labour Ward-in-Charge; Laboratory-in-Charge; Pharmacy-in-Charge; Records-in-Charge; and the Community Contact Person. The exact composition and representation depends on the level of the facility.

The facility management team is responsible for:

- Supervising on-site
- Promoting the Baby Friendly Hospital Initiative
- Ordering PMTCT and HEID supplies, testing kits and ARVs from main store
- Collecting, preparing, analysing and discussing PMTCT monthly reports
- Submitting PMTCT reports to the district medical office
- Facilitating community-based activities
- Collaborating with other care-giving resources in PMTCT, HIV and AIDS
- Referring clients to CTC and other services, e.g., family planning, TB clinics

9.3 PMTCT commodities management

The PMTCT programme requires a reliable and consistent supply of high quality medications, HIV test kits, DBS kits, laboratory reagents, related medical and other supplies in order to effectively support service delivery. An effective supply chain is achieved through proper inventory management, distribution and rational use of the medicines. Close control of medicines and other supplies reduces wastage of medicines and supplies through expiration and pilferage.

Effective and efficient supply chains:

- Maximise the use of resources
- Reduce waste
- Improve service quality

The purpose of a logistics system is to fulfill the six “rights”:

1. The right PRODUCTS
2. The right QUANTITY
3. The right QUALITY
4. Delivered to the right PLACE

5. At the right TIME
6. At the right COST

In fulfilling the six rights, responsible levels must ensure that products are appropriately selected, procured, stored and distributed on time to meet customer demands. Appropriate levels must also ensure that staff are trained and adequate staff are deployed to manage commodities. Logistics management information system tools must be available for capturing and reporting logistics data as well as requesting additional supplies.

Equipment, supplies and medications needed for PMTCT services

Antiretroviral medicines (ARVs) for provision of lifelong ART for pregnant and lactating women living with HIV

- Nevirapine (NVP) suspension
- Zidovudine/Lamivudine (ZDV/3TC) tablets
- Tenofovir/Lamivudine/Efavirenz (TDF/3TC/EFV) tablets
- Efavirenz (EFV) tablet
- Nevirapine (NVP) tablets
- Second-line ARVs

Medicines for prevention and treatment of opportunistic and common infections

- Clotrimazole vaginal pessaries (doses)
- Clotrimazole cream
- Cotrimoxazole syrup
- Cotrimoxazole tablets
- Ferrous sulphate
- Folic acid tabs
- Fluconazole tabs
- Multivitamin tablets
- Multivitamin syrup
- Nystatin oral suspension
- Nystatin cream
- Daktarin oral jelly
- Betamethasone cream

HIV test kits, reagents and supplies

- Determine® HIV 1 /HIV 2, kit of 100 tests
- UNIGOLD, kit of 20tests
- Vacutainer tubes (pack of 100)
- Vacutainer needles (pack of 100)
- DBS Kits of 20 tests
- PCR reagents

Routine equipment and supplies to support PMTCT

- Small refrigerator
- Timer
- Cotton wool rolls
- Antiseptic, e.g. soaps
- Chlorhexidine 0.25%
- Disinfectant / Lysol, 5 litre can
- Iodine solution, 250ml – 10%
- Gloves (latex), non-sterile disposable
- Gloves, surgical sterile size 7.5 and 8
- Gloves, long-sleeved, surgical sterile size 8
- Goggles/ Eyeglass shield
- Apron
- Boots
- Dried Blood Spot (DBS) pack
- Syringes
- Lancets
- Band aids
- Methylated spirit
- Sodium hypochlorite (e.g. JIK)
- Suction tubes
- Hb machines

Ordering

Healthcare workers should refer to the Standard Operating Procedure (SOP) manual for detailed instructions on ordering supplies. General procedures by type of facility are described in Table 9.1 below.

Table 9.1: Procedures for ordering PMTCT supplies

Type of facility	Procedures
PMTCT services only (no ART)	▪ Submit orders to the District Medical Officer (DMO) on a quarterly basis (every 3 months) through the integrated logistics system (ILS) using the Report and Request Form 2A. ▪ The DMO office submits approved forms to the Medical Stores Department (MSD) for resupply.
PMTCT and ART services	▪ Order commodities through the ARV logistics system using local requisition and issue voucher. The officer-in-charge of the pharmacy will issue commodities to the PMTCT unit and to the CTC. The officer in-charge of the facility store will order medicines according to the ARV logistics system. ▪ Order laboratory supplies through the laboratory logistics system if the facility is covered by the lab system. Facilities not covered by the lab system will order through the ILS system.

Practice Point

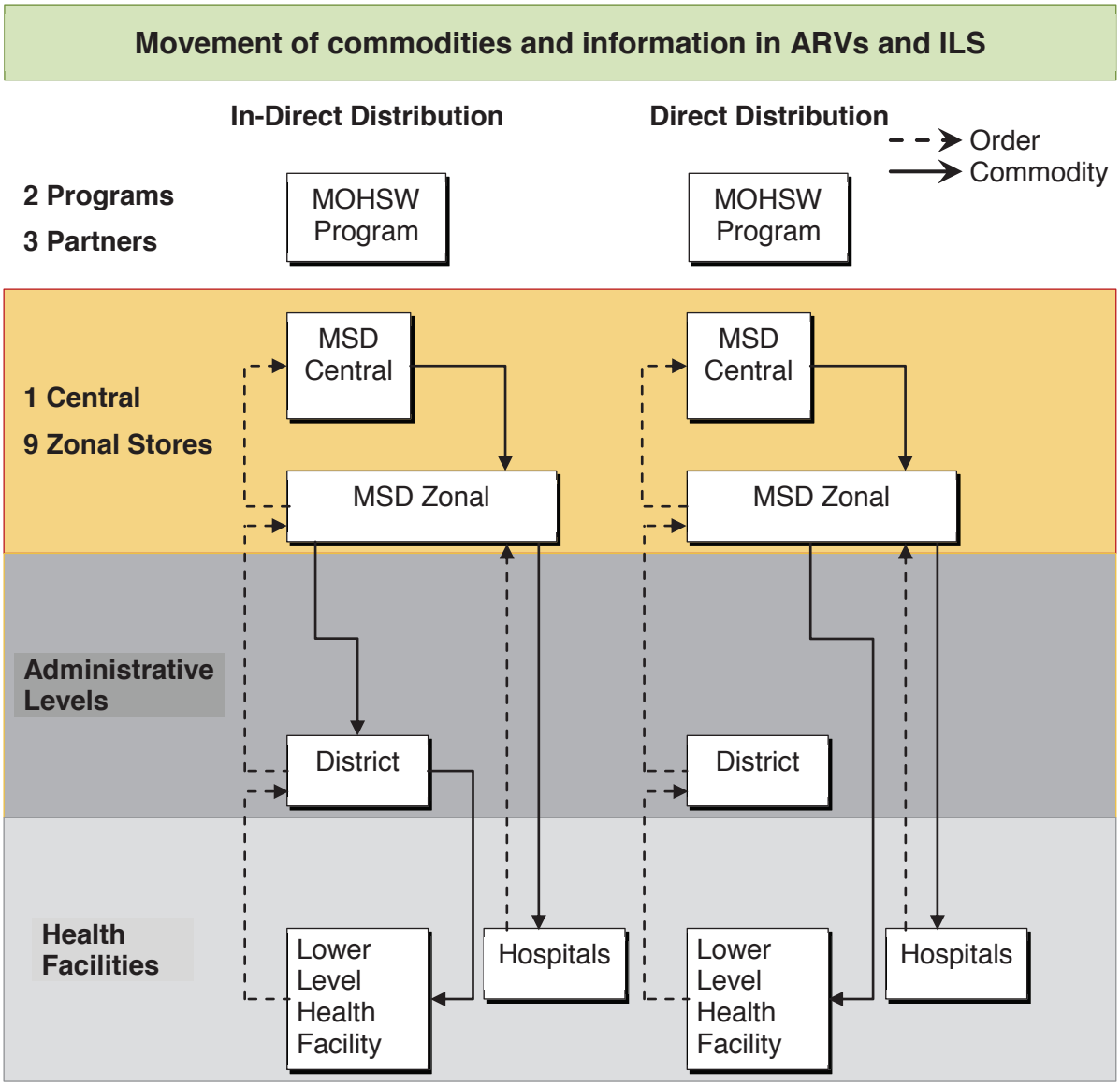
- Submit orders to the district during the first week of the first month of the ordering cycle.

In order to facilitate efficient administration and management of PMTCT commodities, all information regarding commodity usage should be recorded in dedicated register books. Records to be used and updated as commodities are used are shown in Table 9.2 below.

Table 9.2: Recording the use of commodities

Type of record	Tool
Medicines dispensed at PMTCT sites	Daily dispensing register for ARVs and OI medicines (A1)
HIV test kits and DBS used	Log Book for consumption and quality assurance of HIV Rapid tests and DBS kits

Figure 9.1: Movement of commodities and information



Storage

To ensure proper control and security of HIV commodities and related medical supplies, the following guidelines should be followed:

- Keep stocks in locked enclosures. Use appropriate security measures during storage, reception, and transport to prevent theft and pilferage
- Clean and disinfect the store room regularly. Take precautions to discourage infestation by insects and/or rodents.
- Store commodities in a dry, well-lit, and well-ventilated storeroom at less than 25˚C. Keep out of direct sunlight.
- Maintain cold storage at 2 - 8° C.
- Protect the storeroom from water penetration.
- Keep fire safety equipment accessible and check regularly to ensure equipment is functional. Train employees in the use of all safety equipment.

- Limit storage area access to authorised personnel only
- Stack cartons at least 10 cm (4 in.) off the floor, 30 cm (1 ft.) away from the walls and other stacks, and no more than 2.5m (8 ft.) high.
- Arrange cartons with arrows pointing up (↑↑), and with identification labels, expiry dates, and manufacturing dates clearly visible.
- Check expiration dates of incoming commodities and store them to facilitate “first-to-expire, first-out” (FEFO) procedures and stock management. Shelf life of HIV and AIDS commodities can be as short as one year from date of manufacture, so attention to FEFO is particularly important.
- Store all health commodities away from insecticides, chemicals, flammable products, hazardous materials, old files, office supplies, and equipment; always take appropriate safety precautions.
- Separate damaged and expired medicines, HIV test kits and DBS immediately from usable commodities. Dispose of them following existing rules and regulations at local level; indicate this disposal in the Stock Book

Rational use of medicines

Rational use of medicines requires that "patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community" (World Health Organization, 2012).

Examples of the rational use of medicines include:

- Calculating dosages correctly
- Retrieving the correct medicines
- Dispensing non-expired medicines
- Counting medications accurately
- Labelling medications clearly and adequately
- Ensuring patient understanding of instructions on use and storage of medications
- Observing good sanitary procedures (Avoid hand counting).
- Monitoring adherence
- Dispensing adjusted paediatric doses as weight changes (inform caregiver)

Examples of irrational use of medicines include:

- Dispensing incomplete ART regimen
- Calculating or dispensing incorrect dosing
- Dispensing CPT and SP concurrently
- Failing to give CPT to pregnant women or HIV-exposed infants in accordance with national guidelines
- Dispensing expired medicines

Practice Point

- Failure to use medicines rationally in PMTCT can result in adverse outcomes such as treatment failure, development of drug resistance, increased rate of toxicities, shortages of medicines and/or an increased cost of treatment.

Reporting of adverse drug reactions

An adverse drug reaction (ADR) is an unintended, noxious response to standard dose of a medicine. To support on-going monitoring of medications, it is important for HCWs and patients to report adverse reactions, including events related to:

- Prescription and non-prescription drugs
- Minor or serious unexpected ADRs
- Increased frequency or severity of a known ADR
- Overdose, abuse or medication errors
- Lack of efficacy
- Quality defects
- Poisoning
- ADR associated with withdrawal of a medicine

There are four types of forms for reporting adverse drugs reaction and identification.

Table 9.3: Forms for reporting adverse drug reactions

Type of form	Use
Yellow form	Completed and posted by HCW in the event of an ADR (See *Appendix 9-B: Adverse Drug Reaction Reporting Form*)
Green form	Completed and posted by the client or relative in the event of an ADR
Blue form	Completed and posted by HCW to report the poor quality of health products
Patient alert card	Completed by the HCW to identify a patient who has experienced an ADR. This card is held by the patient, who should be instructed to show it to the HCW whenever health services are accessed.

Practice Point

- Forms may be collected from the Tanzania Food and Drugs Authority (TFDA) head offices or downloaded from *http://www.tfda.or.tz*. All DMO offices and RMO offices should obtain the forms from TFDA and ensure they are available for use at the facilities.
- Completed forms should be posted to TFDA. There is no cost associated with obtaining or posting the forms to the TFDA offices.

9.4 Monitoring and Evaluation system

Monitoring is the regular tracking of key programme elements. Monitoring tracks the actual performance against what was planned or expected according to predetermined standards. It generally involves collecting and analysing data on programme processes and results and recommending corrective measures. A monitoring system is a group of components used to track programme activities.

Monitoring the PMTCT programme will help:

- Assess programme performance
- Detect and correct implementation challenges
- Make efficient use of PMTCT programme resources

Evaluation is measuring of the changes in a situation resulting from an intervention. Evaluation is undertaken selectively to answer specific questions to guide decision-makers and/or program managers and to provide information on whether underlying theories and assumptions used in program development were valid, what worked and what did not work and why.

PMTCT programme monitoring and evaluation system

The PMTCT programme monitoring and evaluation system collects and analyses data and provides information on the performance of PMTCT program components, including inputs, service availability, coverage, uptake and impact. It includes all activities aimed at providing the minimum package of services, such as:

- HIV testing and counselling for pregnant women and their families
- ARV for treatment of HIV positive pregnant and breastfeeding women
- ARV Prophylaxis of HIV-exposed infants
- Follow-up of HIV positive mothers and their HIV-exposed or HIV-infected children
- Counselling and support for safe infant feeding practices
- Family planning counselling and referral services

The PMTCT monitoring and evaluation (M&E) system:

The PMTCT M&E system is guided by clear guidelines and protocols (i.e. national PMTCT guidelines, training manuals and standard operating procedures) that include the following:

- Data use and dissemination plan
- Data quality assurance procedures
- Descriptions of data flow and responsibilities at each level of the healthcare system
- Definitions of data sources and methods
- Standard tools (cards, registers), forms and data bases
- Clearly defined indicators (global, national and facility)

Roles and responsibilities for monitoring and evaluation

Different responsibilities are performed at each level of program management to ensure proper flow of PMTCT monitoring and evaluation data from the health facility to the National level and giving feedback.

At health facility level

Healthcare workers will use the tools available at the facility to record PMTCT service provision. At PMTCT health facilities without CTC, trained staff will be responsible for completing the following:

- CTC1
- CTC2
- HIV-exposed Infant card
- RCH1 card
- RCH4 card
- ART register
- HMIS register
- PMTCT Mother and Child Follow-up register

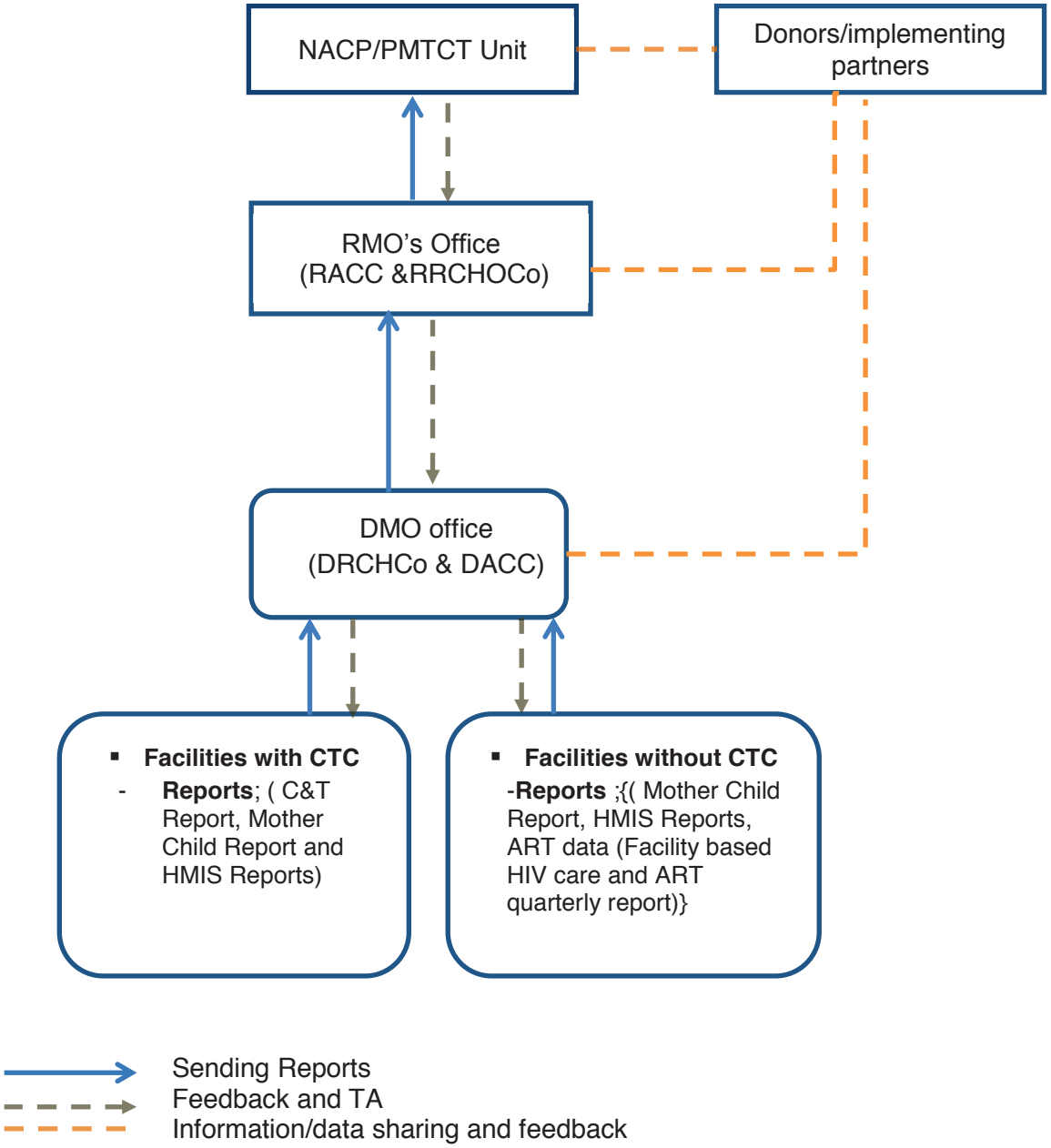
The health facilities providing PMTCT services without a Care and Treatment Clinic will be assigned with facility numbers (CTC number).These numbers will be provided by the ministry and will be used to for reporting purposes and to generate unique client numbers. Reports from these facilities will be sent directly to the district. Health facilities providing ART to HIV + pregnant women and lactating women at RCH, will require assessment and accreditation for them to become full-fledged CTCs For those sites with both PMTCT and CTC services, HCWs will record the following as part of routine RCH data collection.

- CTC1 card
- CTC2 card
- HIV-exposed Infant card
- RCH1 card
- RCH4 card
- PMTCT Mother and Child Follow-up register
- HMIS register

HCWs must compile and send quarterly ART data to the District AIDS Coordinator (DACC) however other RCH reports will continue to be sent monthly or quarterly to the District Reproductive and Child Health Coordinator (DRCHCo) in their respective district.

The flow of data for PMTCT services from facilities to the district level is shown in Figure 9.2 below:

Figure 9.2: Data flow and feedback mechanism



At the District level

To ensure that PMTCT information collected monthly/quarterly from the PMTCT/CTC health facilities flows smoothly, the DRCHCO, DACC and HMIS coordinators must work collaboratively. The DRCHCO or DACC will be responsible to ensure that Mother and Child follow- up, ART and HMIS reports are accurate and are compiled and submitted to RMO office through the Regional Reproductive and Child Health Coordinator (RRCHCo) or Regional AIDS Coordinator (RACC).

On a quarterly basis, the CHMT should evaluate PMTCT service utilisation and coverage by comparing select PMTCT indicators from different facilities in order to identify facilities with performance gaps. The CHMT should then assess potential contributing factors, such as:

- Supportive supervision, quality improvement and mentorship activities
- Data quality assurance
- Staffing at the facility in relation to workload
- Training needs related to PMTCT and ART
- Commodity availability

Based on the findings of the assessment in the above areas, CHMT may take corrective measures such as:

- Providing supportive supervision
- Improving the staffing level or assigning staff more efficiently
- Providing training
- Ensuring adequate supply of commodities and proper usage
- Conducting data analysis and providing supportive supervision and feedback at the lower levels

At Regional level

Under RMO office, RRCHCo/RACC is responsible for compiling, aggregating and sending all RCH-related reports to the PMTCT /NACP and for using the reports to provide feedback on performance to the district and facility for the purposes of quality improvement, planning and decision-making.

At NACP/PMTCT

The NACP/PMTCT unit conducts coordination meetings at the end of each quarter in order to share reports, analyse data and provide feedback. The analysis and coordination informs policy development, planning and decision-making.

9.5 PMTCT monitoring indicators

PMTCT indicators are measures chosen to represent progress in the delivery of PMTCT services. They are key statistics that provide information about the scope, quality and impact of PMTCT activities. Most indicators used in Tanzania measure the delivery of key PMTCT service interventions by healthcare facilities (coverage) and client's acceptance of each of these interventions (uptake). The indicators are calculated using the PMTCT information recorded by HCWs in HMIS, ART and PMTCT Mother Child follow-up registers, monthly/quarterly summary forms, and data from the National Bureau of Statistics.

PMTCT programme indicators are established at the national level according to the needs, resources and standards of the national PMTCT programme and in line with internationally accepted definitions of these indicators.

PMTCT indicators include but are not limited to:

- Percentage of pregnant women who know their HIV serostatus
- Percentage of HIV-infected pregnant women who receive ARVs to reduce risk of MTCT
- Percentage of HIV-exposed infants receiving any HIV test (antibody or virological) by age of 18 months
- Percentage of HIV-exposed infants who received ARV prophylaxis
- Percentage of HIV-exposed infants receiving CPT by 2 months of age
- Percentage of HIV-exposed children tested with DNA PCR by four to six weeks of age
- Percentage of HIV-infected women receiving infant feeding counselling/support at the first infant follow-up visit
- Percentage of postpartum HIV-infected women who receive family planning services
- Percentage of male partners of pregnant women who know their HIV status

See *Appendix 9-A: National PMTCT Indicator Matrix* for additional details.

9.6 PMTCT data recording and reporting system

The PMTCT programme uses standard HMIS tools such as the PMTCT Mother Child follow-up registers, the CTC2 data base, the ART register, the MTUHA registers, the Mothers Health Cards, the HIV-Exposed Infant Card, the CTC1 and CTC2 cards, the Child Health Cards, and the monthly/quarterly summary reporting forms to collect and document PMTCT monitoring information. Collecting and recording information (data) for programme monitoring is an important responsibility for HCWs.

Supervisors ensure that all HCWs in RCH services know what data needs to be collected, how it should be collected, who is responsible for collecting it, how it should be recorded, and how it should be reviewed and verified. Training, supervision, and support are required to ensure that PMTCT monitoring data are consistently and reliably recorded.

PMTCT M&E tools

MTUHA[1] registers

Information on HTC, antenatal care, and labour and delivery are recorded in the MTUHA registers. Health care workers are responsible for ensuring that all data is recorded and reported correctly and in a timely manner.

ART register

The patient's ART information is recorded in the ART register at the facilities. The CTC2 card is the source of data for the ART register. This register is completed at PMTCT/RCH for the stand-alone facilities and at the CTC for facilities with CTC services.

Mother-Child follow-up register (MC)

This Mother-Child follow-up register is used to record the follow-up care provided to mothers and HIV-exposed infants, including cotrimoxazole dosing and infant HIV testing.

HIV-exposed infant card

This HIV-exposed infant card is designed to be completed by RCH clinics, even if there is no CTC and is attached to the mother's CTC2 card. The mother's care in ANC and the outcome of the pregnancy is recorded on the CTC2 card. If the pregnancy results in live birth(s), an HIV- exposed infant card is opened for each live child and attached to the mother's CTC2 card.

Practice Point

PMTCT monitoring data is collected daily and is recorded accurately and consistently in a way that protects client's confidentiality.

- For the purpose of confidentiality clients should be identified by their unique numbers.
- Registers are kept in locations away from public viewing.
- Registers are accessible only to healthcare workers who need to work with them.

Mother's Health Card.

The Mother's Health Card is used to record health information for each client including HIV and syphilis test results, malaria treatments given, immunisations, vitamins, ARVs dispensed to the mother during ANC. It also contains information on ARV dispensed and swallowed during L&D for both the mother and the new born baby and postpartum follow-up information.

Child Health Card

The Child Health Card is used to record important health information for children from birth through 5 years. It includes birth weight, immunisations, disease history, growth monitoring and development. The card should indicate when the child started CPT, name of the ARV prophylaxis the child took after delivery and his or her HIV- exposure status.

[1] "Mfumo wa Taarifa za Uendeshaji wa Huduma za Afya".

Transfer Form

The transfer/ referral form will be used -at health care facilities to transfer/refer a client to a service at another facility.

CTC1 and CTC2 cards

These cards are used to record patient HIV information after being diagnosed with HIV. CTC1 card is usually carried by the client and the CTC2 card remains at the health facility. Information from the CTC2 cards is used to update the ART register and the CTC2 database.

Data use at different levels

The effective use of data at different reporting levels ensures smooth running of the programme. Data is used at different levels of programme management to inform planning, decision making, advocacy, resource allocation, and accountability.

At the national level

The national level has the overall responsibility for monitoring and evaluating of the national PMTCT Programme. The national office uses data to:

- Develop program plans and budgets
- Provide feedback to regions and districts, or directly to healthcare facilities, to help identify and address problems to improve PMTCT services
- Demonstrate accountability to donor-partners
- Ensure adequate coverage of PMTCT services

District and regional offices

Regional and district offices use data for a number of purposes:

- Provide feedback to healthcare facilities in an effort to help identify and address problems and improve implementation of PMTCT services
- Inform program planning and budgeting
- Ensure adequate coverage of PMTCT services within the area
- Report and exchange information with the national office

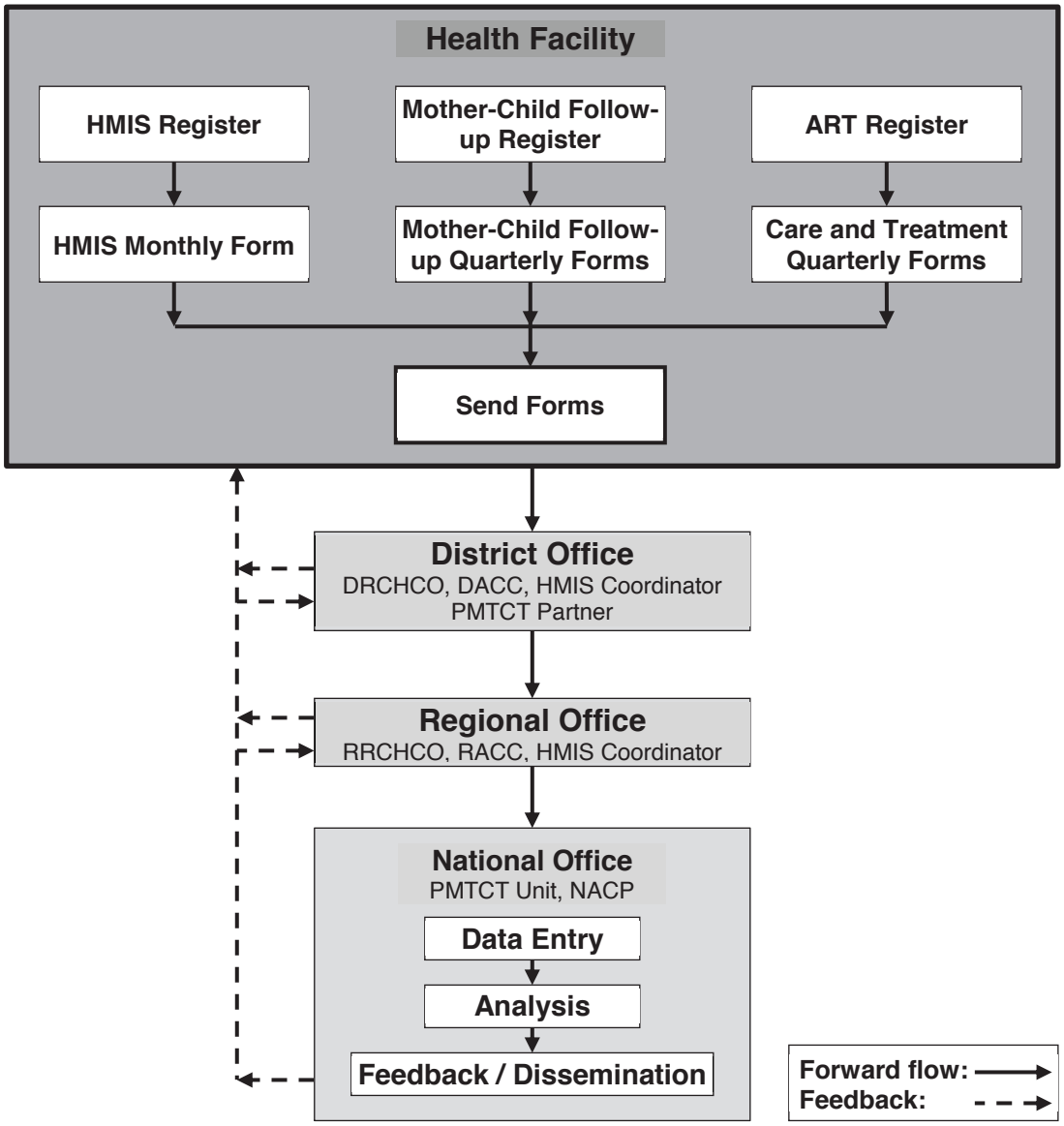
Health facility

HCWs at PMTCT /CTC sites review the monthly/quarterly reports to track program progress and gaps and to improve implementation of PMTCT services. Supervisors conduct regular meetings with staff members to disseminate findings and review progress, problems, and challenges.

Tracking of PMTCT Program

To track the progress of PMTCT activities, health facilities submit monthly or quarterly summary reports to the districts through DRCHCO and DACC who will work in collaboration to send reports to the RRCHCO and RACC at the regional office. The PMTCT program at RCH Section and NACP will then receive compiled reports from RRCHCO and RACC. At the national level, data analysis is done and feedback to the lower levels is provided. Figure 9.3 illustrates the data collection and reporting procedure.

Figure 9.3 Data collection and reporting procedure



Reporting for PMTCT data is done on a monthly or quarterly interval:

- Healthcare facilities send reports to the district by the 7th day of the next month/quarter.
- Districts aggregate healthcare facility reports and send them to the regional office by the 14th of the same month/quarter.
- Regions make copies and send the originals to the central level by the 21st of the same month.

- Feedback is done at all levels and in both directions before the next reporting month/quarter

Providing feedback is an essential aspect of programme monitoring. Feedback helps stakeholders identify successes, problems and activities that need to be completed to meet programme goals.

9.7 Organisation of a health facility for ART and RCH service integration

PMTCT services in Tanzania are provided within RCH clinics whereby pregnant and postpartum women and their infants and young children are seen for antenatal, postnatal, family planning, immunisation and other services. Women and children with HIV infection are referred to the CTCs for further HIV management.

The majority of HIV counselling and testing clinics are a long distance from RCH clinics, posing a barrier for clients. Experience has shown that even in the facility with CTC services, the number of pregnant women with HIV infection enrolled postpartum into on-going CTC services is low.

The challenges in provision of care and treatment services for HIV infected women and young children include:

- Inadequate linkage between RCH and ART programs
- Lower priority given to the HIV-infected pregnant mothers referred to CTC
- High percentage of pregnant women are lost to follow up, leading to missed opportunities for PMTCT interventions
- Missed opportunities for identification of HIV-exposed infants who attend RCH and other health services

Rationale for integration of HIV care and treatment in RCH

Integration of HIV care and treatment services into RCH through use of routine mother and child and immunisation visits serves as an opportunity to improve access and strengthen the delivery of comprehensive services to pregnant women living with HIV and their children.

Integration of HIV services within RCH clinic can effect transformation of services for pregnant women and their children in various ways, including:

- Identifying HIV-exposed infants and their mothers in RCH clinics and from other services delivery points
- Assessing maternal health status within RCH services
  - Clinical evaluation
  - WHO staging
  - CD4 cell count
- Providing ART within RCH (maternal ART for PMTCT and for optimising the health of the mother; ARV prophylaxis for PMTCT)
- Providing effective HIV early infant diagnosis(HEID), including:

  - Performing HIV testing
  - Monitoring for evidence of HIV disease
  - Providing CPT
  - Effective follow-up for exposed infants and treatment for HIV-infected infants
- Counselling on infant feeding
- Monitoring growth and development
- Administering immunizations

Modalities for integration of ART services at RCH

Criteria to provide CTC services at RCH clinics:

Health facilities should meet all the criteria below to be selected for establishing an RCH platform:

- RCH / PMTCT services, and
- Presence of CTC (initiating/refilling facility), and
- Clinician, Nurse and Nurse counsellor trained on ART and available to provide services directly at RCH
- Dedicated space for HIV C&T services at RCH, and
- Commitment and capacity of the health facility management team to provide ART services within RCH services.

Health facilities *with* PMTCT services but without CTC:

- Identified mother CTC site where CTC number will be obtained
- Presence of at least 1 clinician and 2 nurses per site, and
- Presence of trained clinician and nurses on ART, and
- Dedicated space for HIV C&T services at RCH, and
- Commitment and capacity of the health facility management team to provide the RCH services on daily basis.

Steps to establish ART services at RCH

- Orientation of the regional, district managers (RHMT/CHMT)
- Community sensitization on the needs and advantages of the integration
- Assessment and certification of facilities fulfilling the above outlined criteria
- Sensitization of facility leadership and health care workers at the selected health facilities
- Training of RCH health care workers on community sensitisation and on provision of ART services to pregnant women and children. Alternatively, clinicians and nurses already providing services at the CTC may be involved (at least 2 clinicians and 2 nurses per health facility)
- Building capacity of RCH staff to collect CD4 samples and perform CD4 count at RCH
- Sensitization of the onsite laboratory staff to oversee collection of CD4 samples at RCH

- Strengthening the CD4 transportation of CD4 samples and CD4 test results in sites without Point of Care CD4 machines
- Establishing a pharmacy store / cabinet at RCH for OI and ARVs

Client flow pattern at RCH:

- First ANC visit
- Client is registered for ANC services; receives group and or couple HIV testing and counselling; if the woman came alone, she is asked to invite their partner to come for testing.
- Women who test HIV-positive are initiated on Option B+ upon diagnosis, enrolled into care and treatment services. The services include:
  - WHO clinical staging
  - TB and OI screening
  - CD4 testing, haematology(including haemoglobin levels) and biochemistry; give appointment for test results within 3 – 7 days
  - Adherence counselling
- Follow up visits at RCH (during pregnancy) include:
  - Routine ANC services
  - Investigation results including CD4 count
  - WHO staging
  - Refilling of ARV medicines for those already on ART.
  - Counselling for other preventive services. e.g. condom use, CPT, Positive Health Dignity and Prevention (PHDP)
- Follow up visit during post natal (4-6 weeks after delivery and thereafter).
  - HIV test for breastfeeding women and their partners
  - For HEI, will receive the following
    - Early infant diagnosis; DBS PCR results are given with post-test counselling
    - CPT
    - Infant feeding counselling
    - Infant ARV prophylaxis provision with refill for first six weeks
    - ART for HIV infected infants

HIV infected infants and their mothers will be followed at RCH-CTC until the child is 24 months of age, then referred to nearby CTC.

Steps to monitor CTC/RCH integrated services

The following are recommended steps to monitor ART/RCH integration services:

- Perform bi-monthly onsite mentoring during the initial 3 months of implementation (Implementing Partners), then monthly visits for three months followed by quarterly supportive supervision by RHMT/CHMT.
- Use checklist to assess the PMTCT/C&T program performance at RCH, provide supportive supervision and discuss the findings with the hospital management/in charge

- Document health facility visit findings and proposed actions and share with the responsible for follow up

Recording and reporting

- Record data on the PMTCT medicine dispensing register, CTC 1,CTC2 cards and ART registers located at RCH
- Enter information into CTC recording tools
- Obtain and maintain CTC number from main CTC
- HIV positive women enrolled at the main CTC, who become pregnant shall continue with C&T services at RCH
- Refer mother back to CTC at completion of Mother and Child services
- Pregnant women on ART shall be entered into their respective cohorts depending on the month/year of start ART.
- Take all CTC2 files to the main CTC to update the data base at the end of each session
- Generate reports in collaboration with CTC team.

Evaluation of RCH CTC services

The following steps are recommended to evaluate the RCH CTC intervention:

- CHMT in collaboration with RCH and CTC stakeholders will assess integrated RCH-CTC services annually.
- The assessment results will be shared with RHMT and MoHSW (RCH and NACP) and used to improve service provision.

9.8 Comprehensive Supportive Supervision and Mentoring

Supportive Supervision

Supportive supervision is a process that promotes quality at all levels of the health system by strengthening relationships within the system, focusing on the identification and resolution of problems, optimizing the allocation of resources, promoting high standards, teamwork and better two-way communication.

Supportive supervision involves directing and supporting health care workers in order to enhance their skills, knowledge and abilities with the goal of improvinghealth outcomes for the patients they manage. It is an on-going relationship between health careworkers and their supervisors.

Mentoring

Mentoring describes a process conducted by a mentor to a mentee in order to help the mentee to do a job more effectively. Mentoring can be conducted to all interventions but when applied in the clinical setting it is referred to as “clinical” mentoring.

Moreover, mentoring is a "system of practical training and consultation that fosters on-going professional development to yield sustainable high-quality clinical care outcomes". Mentors should be experienced, practising clinicians with strong teaching skills.

Newly developed guidelines provide detailed information on conducting supportive supervision and mentoring activities at all levels of health systems.

Comprehensive Supportive Supervision and Mentoring at different levels

With the Health Sector Reform, the management of health care services in Tanzania has been decentralised from the central to the regional and district levels. Supervision is supposed to take place at all levels i.e. the national, regional, council and health facility levels.

In the past, supervision from the central level have been conducted vertically by leaders of programmes or partners, based on the interventions being implemented. This has resulted into a wide variation between one partner and another. Instead, the focus should be towards a comprehensive supportive supervision and mentoring process for the HIV and AIDS health services and the RCH services.

Mentorship should be recognised as part of the continuum education that is required to create competent health care providers. Supportive supervision and mentoring are supposed to be complementary activities that are both necessary to build a continuum of care and support.

On-going supervision is an important, often overlooked, step to ensuring quality services. Although supervision can be a very participatory process, traditional supervisory healthcare facility visits focus more on inspection and fault-finding rather than on problem solving to improve performance. Health care workers often receive little guidance or mentoring on how to improve their performance. They are frequently left undirected, with few or no milestones to help assess their performance, until the next supervisory visit.

In this regard, comprehensive supportive supervision combined with mentorship programme for both administrative and technical support to health facilities at all levels has been established for delivery of quality HIV and AIDS health services including PMTCT. Supervisors need to take up expanded roles and responsibilities to fulfil this. They need to have comprehensive managerial and administrative knowledge and skills while mentors need to be practitioners and experienced in a specific service/intervention area. Hence,, skilful and experienced practitioners at national and regional levels, need to be capacitated as mentors to provide clinical/technical support to less skilled health practitioners, to ensure that quality services are provided at all facility levels.

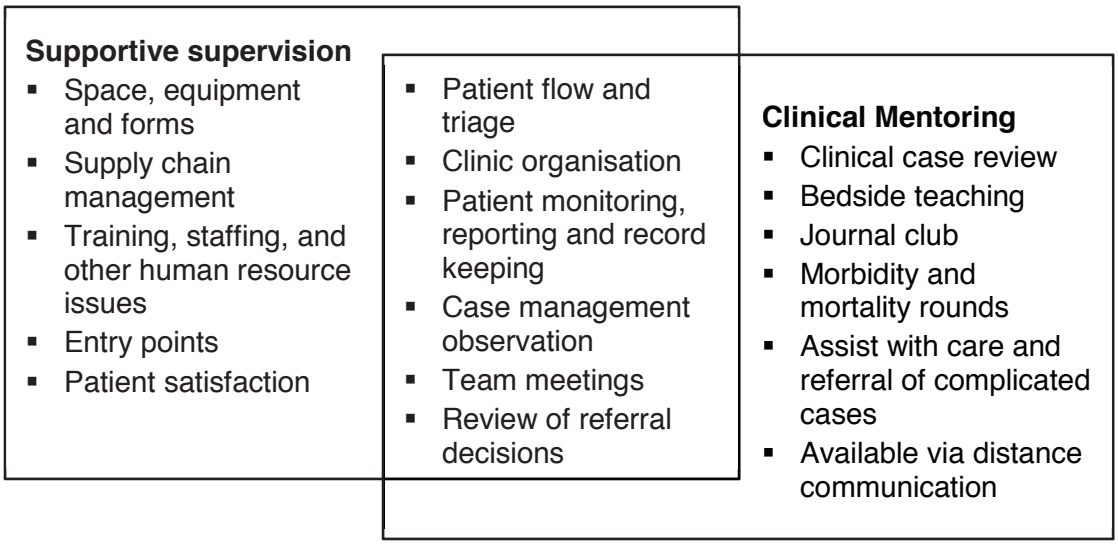
Table 9.4 Comparison of traditional and supportive supervision

Action	Traditional supervision	Supportive supervision
Who performs supervision	External supervisors designated by the service delivery organization	External supervisors designated by the service delivery organization; staff from other facilities; colleagues from the same facility (internal supervision; community health committees; staff themselves through self-assessment)
When supervision happens	During periodic visits by external supervisors	Continuously; during routine work, team meetings, and visits by external supervisors

Action	Traditional supervision	Supportive supervision
What happens during supervision encounters	Inspection of facility, review of records and supplies, supervisor makes most of the decisions, reactive problem-solving by supervisor, little feedback or discussion of supervisor observations	Observation of performance and comparisons to standards; provision of corrective and supportive feedback on performance; discussion with clients; provision of technical updates and guidelines; onsite training; use of data and client input to identify opportunities for improvement; joint problem solving; follow-up on previously identified problems
What happens after supervision encounters	No or irregular follow-up	Actions and decisions recorded; ongoing monitoring of weak areas and improvements; follow-up on prior visits and problems

While mentoring and supportive supervision have several areas of overlap, each requires different skills and as mentioned earlier it should be undertaken by different, but complementary teams. Whereas mentoring mostly targets individual clinicians or small groups, supportive supervision provides an excellent opportunity for follow-up of trainings, to improve overall performance and solve other systemic problems that contribute to poor service delivery.

Figure 9.4 Relationships between Supportive Supervision and Mentoring



PMTCT-specific issues to be addressed in supportive supervision include:

- Availability and utilization of recent PMTCT guidelines and SOPs
- Availability of PMTCT services at RCH clinics
- Coverage of pregnant women(and partners) tested and given results
- Availability of ART for HIV positive pregnant women and ARV prophylaxis for HIV-exposed infants
- Performance of HIV test, CD4 test and WHO staging
- Provision of CPT to HIV-exposed infants from the age of 4 weeks

- Performance of infant HIV testing (DNA PCR) and transportation of DBS samples
- Linkage of HIV-positive women to CTC
- Data management and utilization
- Follow-up on status of HIV-exposed babies, including HIV testing after cessation of breastfeeding
- Counselling and support for safer infant feeding
- Male involvement in PMTCT services
- Family planning services
- Availability and use of TB screening tool

Mentoring areas specific for PMTCT

- HIV education, counselling and testing
- History taking, physical examination
- WHO staging
- Information on testing family members
- Laboratory testing, including CD4 count
- STI screening and management
- TB Screening
- Maternal ART and infant ARV prophylaxis
- CPT
- Counselling on infant feeding, family planning and HIV prevention
- Adherence counselling and assessment
- Appointment systems, tracking and tracing defaulters including linkages and referral to other supportive services
- Disclosure counselling and partner involvement
- Management of HIV-exposed children, including HIV testing, ARV prophylaxis, CPT, and routine monitoring
- Maternity (labour and delivery), delivery practices and standard precautions

Appendices

APPENDIX 2-A: Contraceptive Methods

All contraceptive methods must be readily available and used correctly and consistently.

Barrier Methods

- Male condoms
- Female condoms

Oral Contraceptives

- Combined oral contraceptive pills taken daily
- Progesterone-only pill (POP)

Injectable Contraceptives

- Depo-Provera (administered once every 3 months)

Contraceptive Implants (sub dermal, contain progestin only)

- Norplant (5 rods effective for 5–7 years)
- Implanon (1 rod effective for 3 years)

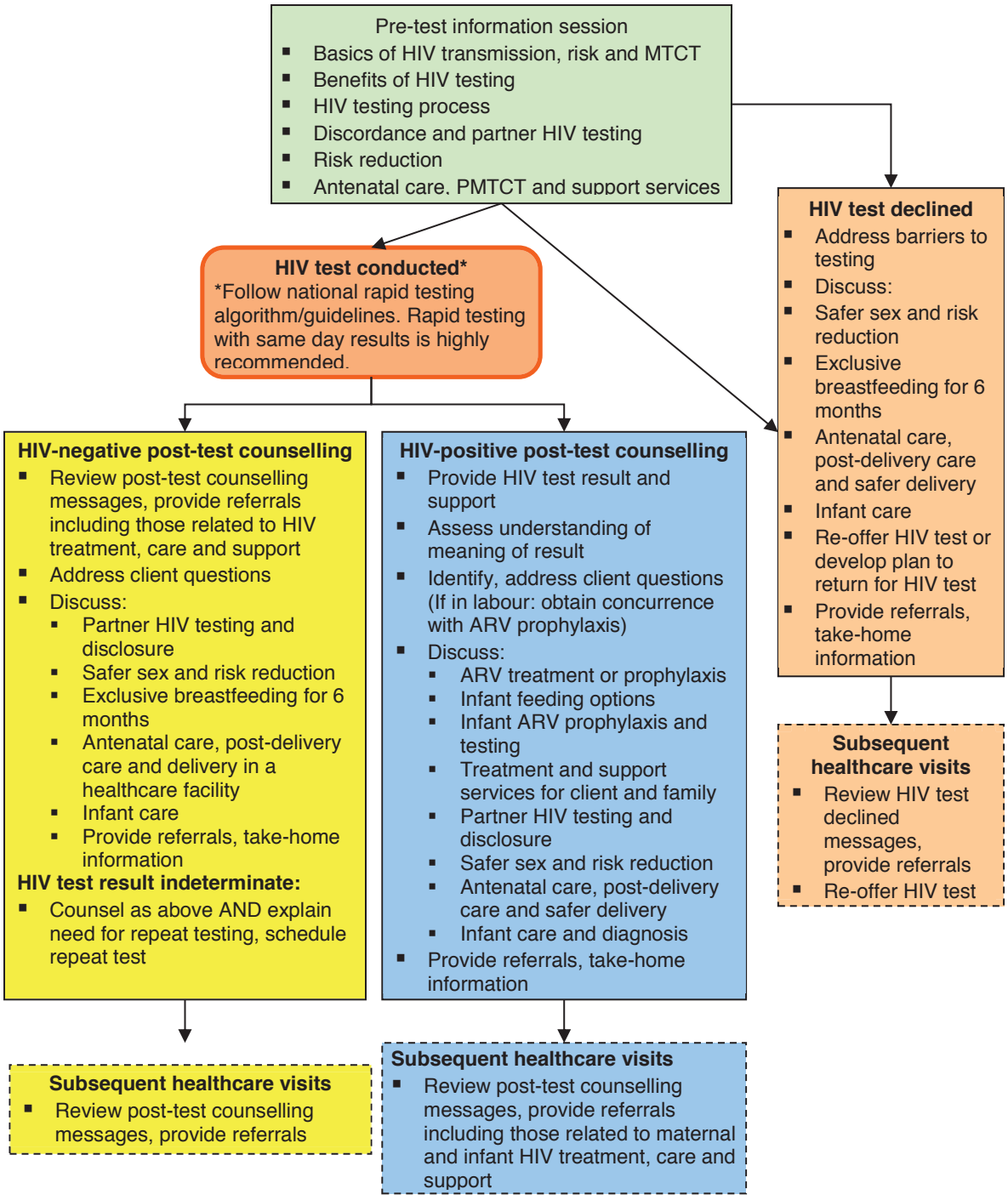
Intrauterine Contraceptive Device (IUCD)

Voluntary surgical contraception (permanent)

- Tubal ligation (female [may be reversible])
- Vasectomy (male)

APPENDIX 4-A: HIV Testing and Counselling in Antenatal Care Settings

Protocol for antenatal care settings



APPENDIX 4-B: Post-test Counselling Checklists

HIV-negative result

Counselling is a relationship, and it provides an opportunity to establish a rapport with the client, answer questions and make sure the client understands the information you are providing.

In many ANC clinics nationally, rapid HIV tests are used. This offers an opportunity for clients who are tested to receive their results the same day. In many settings the client is taught to read his/her own test results. Covering the following items during a counselling session can make that session more effective.

- Greet the client.
- Ask whether the client has any questions before the results are read. Answer questions and let the client know counselling will continue to be available to help with important decisions regardless of the test results.
- Review the group pre-test information/counselling session. Let the client know you are doing this to make sure s/he remembers important information.
- Inform the client that the HIV test result is ready to interpret. Ask the client what the results are. Confirm the results with the client: 'Yes. Your test is “negative”.'
- Pause and wait for the client to respond before continuing. Give the client time to express any emotions.
- Explore the client's understanding of the meaning of the results.
- Discuss and support the client's feelings and emotions.
- Clarify that this means that as of 3 months ago (date) the client was not infected with HIV.
- If there was a recent risk exposure, discuss the need to retest.
- Talk about specific risk reduction strategies with the client:
  - Refer partner for testing.
  - Have sex with only one partner known to be HIV negative.
  - Use condoms (include condom demonstration).
  - Limit the number of sexual partners.
- Talk with the client again about disclosure and about partner testing.
- Discuss discordance.
- Inform the client that counselling is available for couples.
- Emphasise the importance of protecting against infection during pregnancy or breastfeeding, and explain how doing that will lower the risk of an infant becoming infected with HIV.
- Ask whether the client has questions or concerns. Give the client contact information for the clinic should any new concerns arise.

- Discuss support issues and available community resources, in addition to subsequent counselling sessions.
- Remind clients and their families that counselling or referral to counselling will be available throughout pregnancy to help them plan for the future and remain uninfected.

HIV-positive result

Counselling is a relationship, and it provides an opportunity to establish a rapport with the client, answer questions, and make sure the client understands the information you are providing.

In many ANC clinics nationally, the rapid HIV test is utilised. This offers an opportunity for clients who are tested to receive their results the same day. In many settings, they are taught to interpret their own result form. Covering the following items during a counselling session can make that session more effective.

- Greet the client.
- Ask whether the client has any questions before reading the result form. Answer questions and let the client know counselling will continue to be available to help with important decisions regardless of the test result.
- Recap the group pre-test information/counselling session. Let the client know you are doing this to make sure s/he remembers important information.
- Indicate that the HIV test result is ready to interpret. Ask whether the client is ready. Confirm the test results with the client.
- Pause and wait for the client to respond before continuing. Give the client time to express any emotions.
- Check the client's understanding of the meaning of the results.
- Explore and support the client's feelings and emotions.
- Reassure the client that it is common in this situation to have feelings and emotions.
- Inform the client of essential PMTCT issues. Discuss and support initial decisions about:
  - Antiretroviral treatment and prophylaxis
  - Infant feeding options
  - Childbirth plans
  - Adequate nutrition
  - Address “positive living”; provide referral for preventive healthcare services.
  - Prompt medical attention, prophylaxis, and treatment of opportunistic infections.
  - Stress management and support systems
- Explain that the client’s test results do not indicate whether her partner is infected and that her partner will need to be tested.
- Discuss disclosure and support issues.
- Address risk reduction that is necessary to protect her partner(s) and herself from re-infection:
  - Condom use (male and female condoms, and include condom demonstration)

  - Reducing the risk of infecting others and screening and treatment for sexually transmitted infections.
- Identify sources of hope for the client, such as family, friends, community-based services, spiritual supports and treatment options. Make referrals when appropriate.
- If the client already has children, discuss and plan for testing of children.
- Ask whether the client has questions or concerns. Give the client contact information for the clinic should concerns arise.
- Remind mothers and families that counselling will be available throughout pregnancy to help them plan for the future and obtain necessary services.

APPENDIX 4-C: How to Collect Dried Blood Spot (DBS) Specimens for Infant Testing

Step 1: Collect supplies

Supplies for conducting a heel or toe prick

- Sterile lancets (2 mm long)
- Sterile gauze pads or cotton wool
- Alcohol wipes or disinfectant for skin (70% spirit)

Paperwork supplies

- Pen
- DNA-PCR Test Laboratory Requisition Form
- Specimen Delivery Checklist

Safety supplies

- Gloves (powder-free preferred)
- Rubbish bin
- Sharps container

Supplies for collecting, drying and storing specimens

- DBS filter paper blood collection card
- Drying rack
- Glassine paper
- Sealable plastic bags
- Desiccant packs
- Humidity indicator cards
- Permanent marker to label bag
- Large envelope

Because there are many items required for DNA-PCR, it is important to have a reliable procurement and supply management system to prevent stock outs.

Step 2: Use Universal Precautions

Always use Universal Precautions when collecting blood specimens. These include:

- Treat all blood specimens as if they are infectious.

- Wash hands and dry them thoroughly before performing procedures.
- Put on gloves before coming in contact with blood and other body fluids or items that may be contaminated with blood or body fluids.
- Take precautions to avoid needle injury and handle all sharps with extreme care.
- Wash hands immediately after removing gloves.
- Promptly clean up any spills of infectious material with a disinfectant such as a 0.5% dilution of household chlorine bleach[1].
- Dispose of contaminated sharps and waste appropriately.
- In the event of a sharps injury, follow the protocol at the facility for post-exposure prophylaxis.

Step 3: Complete the laboratory form and label the sample card

The first step in collecting DBS specimens is to ensure that the test documentation is in stock. ***Mislabelling specimens is the most common error in DBS specimen collection***.

Step 4: Choose the puncture site

Once basic paperwork has been completed, the HCW is ready to take the blood sample. The next step is to choose the puncture site.

Small infants ≤9 kg: Prick the heel. The heel is the only suitable puncture site for very young or very small infants because there is a risk of hitting the bone when puncturing fingers or the toes. Heel puncture should be performed on the plantar surface of the heel, beyond the lateral and medial limits of the heel bone. Choose the lowest point in recommended area. The back of the heel and the Achilles tendon are not suitable sites and should not be punctured.

Larger infants >9 kg: Prick the heel or lateral aspect of the big toe. Fingers and small toes should still be avoided because of the risk of hitting bone.

Step 5: Demonstrate to caregiver how to hold the child for the procedure

- Ask the caregiver to sit holding the baby in an upright position against her or his chest (as shown in photo to right). Position the infant with her or his foot hanging downward. This will increase venous pressure and will help the blood flow more easily.
- Ask the caregiver to hold the child securely so that the blood sample can be taken.

[1] A 0.5% solution of household chlorine bleach can be made by mixing 6 parts water to 1 part 3.5% chlorine bleach. A “part” is any unit of measure (e.g., teaspoon, cup, litre or anything else).

Step 6: Prepare the puncture site

- If the child's finger or foot is not clean it should be washed with soap and clean water.
- Warm the site to increase blood supply. The parent or caregiver can do this by holding the child's foot and rubbing gently. A cloth or clean nappy soaked in warm water (no warmer than 41°C) can also be kept on the puncture site for three minutes.
- Wash hands and put on powder-free gloves. If powdered gloves are being used, rinse glove-covered hands after putting them on to remove the powder.
- Clean the child's foot with alcohol. Start in the middle and work outward to prevent contaminating the area. Allow to air dry for 30 seconds. It is important to allow the site to dry because residual alcohol may cause haemolysis (haemolysis refers to the breakdown of red blood cells, which can interfere with laboratory testing), which will invalidate the specimen.

Step 7: Collect the specimen

- Encourage the caregiver to comfort her/his baby during the procedure. Comforting reduces distress and makes it easier for the baby to regain calm after the procedure. Ask the caregiver to hold the infant securely so that the blood sample can be taken.
- Hold the child's foot, firmly puncture the site off-centre with a new sterile 2mm lancet. A 2mm lancet is the correct length to puncture safely without damaging bone. **Do not use a needle, scalpel or longer lancet**. The puncture should be with one continuous, deliberate motion at an angle (slightly less than 90 degrees).
- Allow a large blood drop to form and wipe it away with a dry sterile gauze pad. The first drop of blood may contain tissue fluids that could contaminate the specimen.
- Allow a second large blood drop to form.
- Holding the filter paper card by its edges, bring the card surface to the drop. **Lightly** touch the one circle on the filter paper card to this drop of blood, allowing the blood to soak through and completely fill the pre-printed circle by natural flow.
- Do not drag the infant's foot down to the filter paper card as this causes them to struggle and you may lose the drop of blood or spoil the card.
- Fill the circle completely but avoid layering blood. The blood should be drawn onto the filter paper card by capillary action, with no contact between the infant's foot and the paper. Apply blood to one side of filter paper card only. Each drop should permeate through to the other side of the card.
- Repeat this procedure, filling the remaining circles with successive drops of blood. Fill all circles if possible. If this is not possible collect enough blood to fill at least three circles on the filter paper card.

If blood flow diminishes, wipe away the congealed blood with a sterile gauze pad and gently massage or apply pressure to the whole lower leg and foot. It is important to avoid squeezing or "milking" the area directly around the puncture site. Milking the site may contaminate the blood specimen with tissue fluids, resulting in an invalid specimen. If the puncture is still not bleeding after applying pressure, a second puncture is required. The second puncture can be taken from the other foot or from a different safe part of the same foot.

Filter paper cards are designed to absorb blood uniformly. Blotting or smearing the blood onto the paper, or placing a blood drop on top of another drop, damages the paper's absorption capacity and leads to inaccurate test results. It is therefore crucial that the blood be properly placed on the filter paper card.

Summary of proper DBS specimen collection

- Apply blood to one side of the filter paper card only. Either side may be used for blood specimen collection
- Do not press the filter paper card against the puncture site
- Do not layer drops of blood on one circle or apply blood more than once in the same collection circle
- Avoid touching the circles or smearing them
- It is critical that entire circle be uniformly saturated

Remember—It is better to complete three good circles than five incomplete ones!

Step 8: Apply gauze to puncture site and place filter paper card for drying

When at least three, but preferably five, of the circles have been filled, wipe excess blood from the infant's foot and apply gentle pressure to the wound with gauze pad, discarding gauze in a bin after use. Place the filter paper card in a drying rack or place it flat on a clean dry surface.

Step 9: Complete documentation

After the specimen collection is completed, record the test in the infant's Under 5 Card and medical record. Remind caregivers to:

- Return to the clinic to receive their child's test result. Make an appointment for the delivery of the results and post-test counselling. If the child is hospitalised, an appointment should be given upon discharge for children whose test results were not received during the hospital stay.
- Promptly bring the child in for care if there are any signs of illness.

The test result will be recorded in the General Counselling and Testing Register when the result is received.

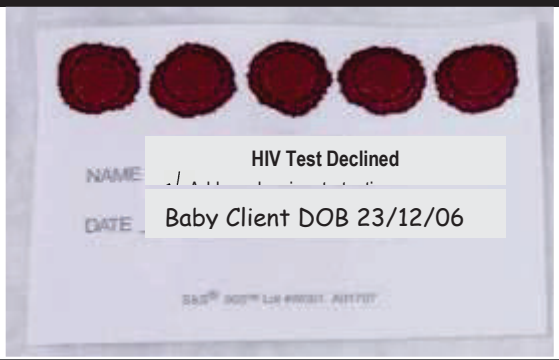
Incorrectly collected specimens can result in either erroneous laboratory results or delays due to the need for a new blood specimen.

Characteristics of valid DBS specimens

- Filter paper card circles have not been contaminated by dirt or other foreign substances.
- Blood spots completely fill all of the pre-printed circles and have been applied evenly on only one side of the filter paper card, without layering or clots.

- All information is readable and accurately recorded on the DNA-PCR Test Laboratory Requisition Form and on the filter paper card ***(Remember — labelling errors are the most frequent source of errors in DNA-PCR testing, so take the necessary time and care)***.
- The specimens have been dried for at least three hours away from direct heat and sunlight on a flat surface that will not absorb the blood.

Examples of a valid specimen

Picture	Description
	▪ Circles are completely filled ▪ The card has been labelled with appropriate identification ▪ Blood is soaked through to the other side of the card

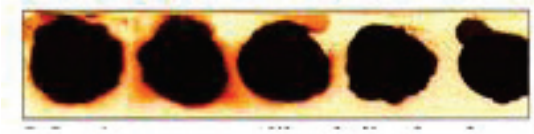
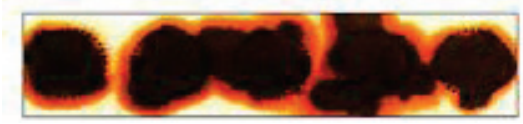
Characteristics of invalid DBS specimens (see Table 3.4)

The most common practices that invalidate specimens are:

- Filling out filter paper cards and requisition forms improperly or incorrectly
- Not enough blood for testing
- Specimen appears scratched or abraded
- Drying the specimens improperly or placing DBS cards in bags before they are completely dry (specimen appears bright red on the filter paper card)
- Oversaturated specimens
- Specimen appears clotted or layered (putting multiple drops)
- Applying blood to both sides of filter paper card
- Specimen is haemolysed, discoloured or contaminated
- Specimen exhibits serum rings, serum has separated from cells
- Blood does not go through paper completely

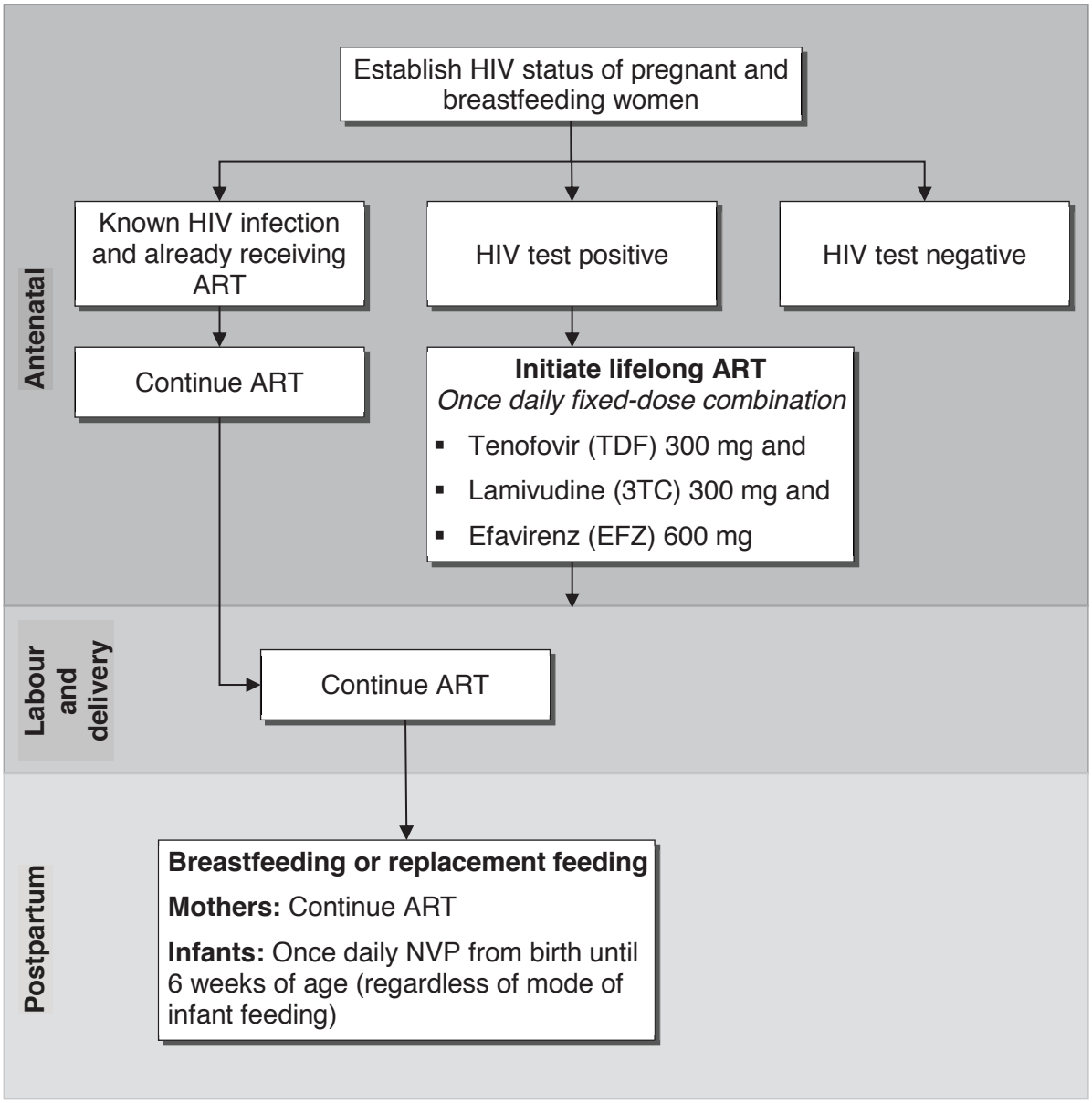
Examples of invalid DBS specimens

Picture	Problem and possible causes
	**Problem** Not enough blood for testing **Possible causes** ▪ Removing filter paper card before blood had completely filled circle or before blood has soaked through to the other side

Picture	Problem and possible causes
	▪ Applying blood to filter paper card with a capillary tube ▪ The filter paper card coming in contact with gloved or ungloved hands or substances, such as hand lotion or powder
	**Problem** Specimen appears scratched or abraded. **Possible causes** ▪ Applying blood with a capillary tube or other device
	**Problem** Specimen is bright red. **Possible causes** ▪ Not drying specimen fully
	**Problem** Specimen is too saturated. **Possible causes** ▪ Soaking both sides of the filter paper card ▪ Applying blood with a syringe
	**Problem** Specimen appears clotted or layered. **Possible causes** ▪ Layering one blood drop on top of another ▪ Filling circle on both sides of filter paper card
	**Problem** Specimen is haemolysed, discoloured or contaminated. **Possible causes** ▪ Squeezing or “milking” the area surrounding the puncture site ▪ Allowing filter paper card to come in contact with glove or ungloved hands ▪ Exposing blood spots to direct heat
	**Problem** Specimen exhibits serum rings, serum has separated from cells.

Picture	Problem and possible causes
	Possible causes ▪ Not allowing alcohol to dry at puncture site before making skin puncture ▪ Allowing filter paper card to come in contact with alcohol, hand lotion, etc. ▪ Milking or excessive squeezing of the area surrounding puncture site ▪ Drying specimen improperly ▪ Applying blood to filter paper card with a capillary tube

APPENDIX 5-A: Algorithm for ARV Treatment and ARV Prophylaxis



Source: World Health Organisation, Programmatic Update. Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants, Executive Summary, April 2012

APPENDIX 6-A: Baby-Friendly Hospital Initiative—Ten Steps to Successful Breastfeeding

The Baby-Friendly Hospital Initiative is a worldwide effort launched in 1991 by UNICEF and the World Health Organisation to ensure that all maternity centres, whether freestanding or hospital-based, become centres of breastfeeding support. *The Ten Steps to Successful Breastfeeding* are a summary of practices to improve conditions for all mothers and babies, including those who are not breastfeeding.

The Ten Steps are:

1. Have a written breastfeeding policy that is routinely communicated to all healthcare staff.
2. Train all HCWs in the skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within half an hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation even if they are separated from their infants.
6. Give newborns no food or drink other than breast milk unless medically indicated.
7. Practice rooming, in a hospital arrangement where the mother and infant stay in the same room day and night, which allows unlimited contact between mother and infant.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies and soothers) to breastfeeding babies.
10. The key to best breastfeeding practices is continued day-to-day support for the breastfeeding mother within her home and community.

APPENDIX 6-B: Commercial Infant Formula Requirements

Commercial infant formula requirements in first 6 months

Month	500 g Tins/Month	450 g Tins/Month
1	4	5
2	6	6
3	7	8
4	7	8
5	8	8
6	8	9
Total	**40**	**44**

Source: WHO, UNICEF and USAID. HIV and Infant Feeding Counselling Tools: Reference Guide. 2005. http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_CT/ISBN_92_4_159301_6.pdf

Developmental Milestones Monitoring for ART Clinics
12 Months – 18 Months

Name of child:_____ **Date of birth:**_____ **File no:**_____

Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
12 months Date:_____	**Sitting:** ☐ Turns around to reach toys next to him ☐ Sit down unaided from standing **Standing: (Walking)** ☐ Walks forward if held by one hand ☐ Walks around furniture sideways-cruising **Prone: (Crawling)** ☐ Crawl ☐ Pull up to standing by holding onto object ☐ Bear walking	**Eyes:** ☐ Looks for toys when out of sight **Hands:** ☐ Able to pick up a button with his thumb and index finger (Pincer grasp) ☐ Release on request ☐ Hold with 1 hand and play with the other ☐ Throw things into a container and take it out again	☐ Knows own name ☐ 1 Word sentences ☐ 2 Words with meaning ☐ Understand simple commands ☐ Copies words he hear a lot	**Independence:** ☐ Finger feeds ☐ Drinks from cup ☐ Pushes arms into sleeves ☐ Take own socks off **Play:** ☐ Throw a ball, but loses balance in process ☐ Like to fit things into one another(Nesting toys) ☐ Throw an object on the floor for pleasure	☐ Unable to bear weight on legs ☐ Not yet crawling and pulling to stand ☐ Abnormal grasp ☐ Failure to respond to sound ☐ Unable to start with solids independently
	Comments:			**Signature:**	
15 months Date:_____	**Sitting:** ☐ Stand up from sitting ☐ Will climb on a chair and sit down **Standing: (Walking)** ☐ Bend over to pick up an object ☐ Squat and stand up again ☐ Walks alone, broad base with arms in the air **Prone: (Crawling)** ☐ Able to crawl fast and manage obstacles e.g. stairs	☐ Hold the crayon in a fist when scribbling ☐ Turn pages of a book roughly ☐ Hold 2 small toys in 1 hand ☐ Put lid back on container	☐ Jabber with expression ☐ 2–6 words ☐ Points to known object on request ☐ Understand what the word “up” and “down” mean ☐ Respond to a simple command e.g. “Fetch the ball”	**Independence:** ☐ Picks up, drinks and puts down a cup ☐ Indicates wet nappy ☐ Bring spoon up to his mouth during feeding tends to lick it upside down **Play:** ☐ Examines everything ☐ Enjoys the company of other children, but prefer to play by himself	☐ Unable to bear weight on legs ☐ Not yet walking ☐ Abnormal grasp ☐ Abnormal posture: floppy/spastic ☐ Failure to respond to sound ☐ Not yet talking
	Comments:			**Signature:**	
18 months Date:_____	☐ Walk with more confidence ☐ Walk, squat and pick up something, stand up and walk again ☐ Start running, often falls.	☐ Build a 3 cube tower ☐ Scribbles ☐ Hold the crayon in a fist ☐ Turn pages of a book	☐ 6–20 words ☐ Understand 15 words ☐ Points to known object on request ☐ Use gestures to indicate his needs ☐ Point out body part on himself and another person	☐ Mood swings **Independence:** ☐ Handles spoon well ☐ Takes off shoes and socks **Play:** ☐ Interested in own mirror image	☐ Failure to walk ☐ Unable to pick up small objects e.g. buttons ☐ Abnormal posture ☐ Inability to understand simple commands ☐ Not yet talking ☐ Poor vision
	Comments:			**Signature:**	

These developmental norms are selected and adapted for the ART Clinic setting. Each section represents basic milestones for specific age groups. If the child lacks 3 or more milestones in a specific category, the child should be assessed for treatment failure. The child should also be referred to an Occupational Therapist, Speech Therapist or Physiotherapist according to the area of developmental delay.

Source: South-to-South Partnership for Comprehensive Paediatric HIV Care, July 2010

Developmental Milestones Monitoring for ART Clinics
24 Months – 36 Months

Name of child:_____ **Date of birth:**_____ **File no:**_____

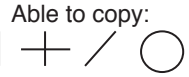
Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
24 months (2 years) **Date:**_____	☐ Take few steps backwards ☐ Runs and change direction easily ☐ Jump off step with 2 feet together ☐ Stand and kick a ball ☐ Able to throw a ball	☐ Page through a book page by page ☐ Obvious hand preference ☐ Uses lines: I, _ ,O ☐ Complete 3 piece puzzle ☐ Open a sweet with little help	☐ <50 words ☐ 2 word sentences ☐ Ask for food, drink, toilet ☐ Point to at least 5 body parts ☐ Name 3 body parts ☐ Able to place objects with the same colour together ☐ Can count up to 3 ☐ Able to orientate self in relation to another object e.g. "Stand behind /on top of/in front of the chair"	☐ Has a strong will of his own "I'll do it myself!" ☐ Temper tantrums ☐ Likes to give hugs ☐ Shy towards strangers **Independence:** ☐ Spoon feeds without mess ☐ Take off own clothes ☐ Toileting: Clean during day, start indicating his need **Play:** Pretend play ☐ Want to help with house chores and copy the parents	☐ Unable to understand simple commands ☐ Poor coordination ☐ Poor hearing ☐ Poor vision
	Comments:			**Signature:**	
36 months (3years) **Date:**_____	☐ Walk forward and backward ☐ Walks on tip toes ☐ Walk on straight line ☐ Jump 2 feet together ☐ Able to climb on chair ☐ Catch a big ball (hugging against chest) ☐ Hold ball above head and throws ☐ Run and kick a ball	☐ Copies the following shapes: _, I, O,T ☐ Start colouring in , go over the lines ☐ Pencil grip: Holding crayon to draw (still developing) ☐ Builds a 9 block tower ☐ Thread big beads on a shoelace ☐ Draw-a-man: at least 4 parts	☐ Produce all consonants and vowels correct. ('R', 'S' not perfect) ☐ Talks constantly and can have a simple conversation with you ☐ Knows own name and gender ☐ Show his age by using his fingers ☐ Can identify all parts of face ☐ Identify circle, square and triangle if you name them ☐ Fit basic colours together (blue, red, yellow)	☐ More co-operative temperament ☐ Understand what is socially acceptable **Independence:** ☐ Want to go to the toilet by himself ☐ Dress with supervision ☐ Eat with a spoon ☐ Washes and dries hands **Play:** Parallel play ☐ Play close to other children ☐ Build a 3 piece puzzle ☐ Enjoy listening to stories ☐ Focus for 10 minutes on one game	☐ Using only single words ☐ Ataxia (movements is similar to a drunk person, uncoordinated intentional movements)
	Comments:			**Signature:**	

Each section represents basic milestones for specific age groups. If the child lacks 3 or more milestones in a specific category, the child should be assessed for treatment failure.

Source: South-to-South Partnership for Comprehensive Paediatric HIV Care, July 2010

Developmental Milestones Monitoring for ART Clinics
48 Months

Name of child:_____ **Date of birth:**_____ **File no:**_____

Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
48 months (4 years) **Date:** _____	☐ Walk heel-toe with good balance ☐ Walk on tip toe ☐ Stands on 1 leg for 3seconds ☐ Hop on 1 leg ☐ Jump with 2 feet together forward ☐ Can catch and throw a ball ☐ Catch a bouncing ball direct	☐ Draw-a-man: at least 8 parts ☐ Able to copy:  ☐ Able to pick up a button with thumb and index finger (2Point pincer grip) ☐ Build a 10 block tower ☐ Able to do own buttons	☐ Full name and age ☐ Give the names of 4 colours if you point to it ☐ Point to most of his body parts if asked to ☐ Count up to 10 ☐ Know the difference between big and small ☐ Able to orientate self in relation to another object e.g.“Stand behind /on top of the chair” ☐ Listen to a longer story	☐ Sometimes silly and like to show off ☐ Get involved in fights **Independence:** ☐ Eats with spoon ☐ Carry a cup without wasting water ☐ Want to go to the toilet by himself **Play:** Make believe play ☐ Enjoy playing with other children ☐ Able to play alone ☐ Identify pictures of shapes:  ☐ Complete a puzzle (15piece at most)	☐ Speech difficult to understand because of poor articulation or omission or substitution of consonants ☐ Not able to draw basic shapes ☐ Doesn’t show an interest to play
	Comments:			**Signature:**	

Each section represents basic milestones for specific age groups. If the child lacks 3 or more milestones in a specific category, the child should be assessed for treatment failure.

Source: South-to-South Partnership for Comprehensive Paediatric HIV Care, July 2010

Developmental Milestones Monitoring for ART Clinics
60 Months

Name of child:_____ **Date of birth:**_____ **File no:**_____

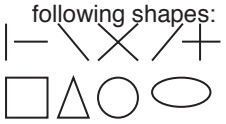
Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
60 months (5 years)	☐ Stand on 1 leg (8-10seconds) ☐ Walk heel-toe with good balance ☐ Walk on tiptoe ☐ Hop on one leg (3times) ☐ Jump with 2 feet together ☐ Able to march ☐ Able to catch and throw a ball ☐ Catch and throw a bouncing ball with both hands	☐ Able to build a 10 block tower ☐ Able to cross his midline during a clapping game ☐ Copies square and triangle ☐ Draw a man: all the basic part of a man with clothes ☐ Copy the following shapes on paper  ☐ Colour in fairly neatly within the lines of a picture ☐ Hold pencil like an adult ☐ Able to thread beads	☐ Fluent speech ☐ Able to talk about the world around him ☐ Ask a lot of questions ☐ Able to point to basic body parts if asked to ☐ Able to name body parts if you point to it ☐ Able to give his first and last names ☐ He knows where he lives: street name/ residential area and city	☐ Choose and make friends ☐ Able to take turns ☐ Temperament: gentle and friendly ☐ Trust and like adults ☐ Obedient to caregivers (open to social norms and authority) **Independence:** ☐ Dresses and undresses alone ☐ Fasten and loosen buttons ☐ Can wash himself ☐ Toilet trained: he can clean himself ☐ Able to eat with spoon ☐ Able to butter bread **Play:** Fantasy ☐ Play with sticks and stones ☐ Build a puzzle (20piece at most)	☐ Emotional immaturity e.g. acting out, disruptive ☐ Poor concentration ☐ Unable to play in a group ☐ Poor posture during table top activities
Date: _____	**Comments:**			**Signature:**	

Each section represents basic milestones for specific age groups. If the child lacks 3 or more milestones in a specific category, the child should be assessed for treatment failure.

Source: South-to-South Partnership for Comprehensive Paediatric HIV Care, July 2010

Developmental Milestones Monitoring for ART Clinics
72 Months

Name of child:_____ **Date of birth:**_____ **File no:**_____

Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
72 months (6 years) **Date:** _____	☐ Sits up without using hands ☐ Stand on 1 leg for at least 10 counts ☐ Long jump keeping his feet together ☐ Make a star jump ☐ Catch a ball with his hands(not against his chest) ☐ Bounce a tennis ball and catch it again	☐ Follow moving object fluently with his eyes ☐ Rhythmical clapping across the midline(Play clap game) ☐ Able to build a 10 block tower ☐ Colour in well within the lines of a picture ☐ Draw a man: Detailed picture of a human with clothes ☐ Hand dominance established ☐ Able to copy the following shapes: 	☐ Able to point to all body parts if asked to (choose 3) ☐ Able to give the names of all body parts (choose 3) ☐ Able to point to circle, triangle and rectangle if asked to ☐ Able to name all the circle, triangle and rectangle ☐ Able to point to blue, green, red and yellow ☐ Able to give the names of blue, green, red and yellow on request ☐ He can count 13 objects ☐ Identify numbers 1 to 10 ☐ Able to lift his left hand and right hand when requested	☐ Make and keep friends, play in groups ☐ Open to social norms prescribed by his culture ☐ Respect others ☐ Able to express his feelings ☐ Self-confident to talk in front of people **Independence:** ☐ Able to use a knife ☐ Able to wash dishes ☐ Go to bed on his own ☐ Dress and undress himself ☐ Fasten his own buttons and belt **Play: (**Cooperative play) ☐ Able to place 1 block in relation to another block e.g. in front of, behind ☐ Thread beads ☐ Able to build a puzzle with ease (30piece at most) ☐ Enjoy to repeat a story	☐ Clumsy ☐ Poor posture ☐ Poor pencil grip ☐ No hand dominance
	Comments:			**Signature:**	

Adapted from *Enhancing your child's Development and Paediatric ART Programme KwaZulu Natal for Health Workers in the community.* Compiled by Annemadelein Scherer, Occupational Therapist

Each section represents basic milestones for specific age groups. If the child lacks 3 or more milestones in a specific category, the child should be assessed for treatment failure.

Source: South-to-South Partnership for Comprehensive Paediatric HIV Care, July 2010

APPENDIX 7-A: Cotrimoxazole Preventive Therapy in Children

For HIV-exposed children

- Every infant born to a mother living with HIV should receive CPT to prevent PCP, beginning at 4 weeks of age or as soon as possible thereafter.
- CPT should be continued until the child is proven to be HIV antibody negative at 18 months and the mother has stopped breastfeeding.

For children with presumptive diagnosis of HIV infection

- Start CPT at any age and continue until HIV status is confirmed negative and there is no risk of transmission through breastfeeding.

CPT should be stopped only if the HIV-exposed or presumptively diagnosed child tests HIV negative 6 weeks after the complete cessation of breastfeeding.

For HIV-infected children

CPT should be given to:

- All HIV-infected infants <12 months of age
- All HIV-infected children between 1 and 4 years of age who have clinical signs or symptoms suggestive of mild, advanced or severe HIV disease (WHO Stage 2, 3 and 4)
- All children ≥12 months of age whose CD4 percentage is less than 25%
- All HIV-infected children >5 years of age should start or continue CPT according to adult guidelines

If ARV treatment is not available for the HIV-infected child, CPT should be continued indefinitely.

Side effects and allergy

- Cotrimoxazole is generally well tolerated. The most common side effects are nausea, vomiting and diarrhoea. Rash and fever are less common but also occur. These side effects are generally seen within the first 2 weeks of use. If the child is allergic to cotrimoxazole and needs CPT treatment, Dapsone should be prescribed as an alternative to prevent PCP.HCW should fill in the adverse drug reaction form in the event of side effects.

APPENDIX 7-B: WHO Clinical Staging of HIV and AIDS for Adults and Adolescents with Confirmed HIV Infection[1]

To be used for persons ≥15 years of age

Clinical Stage 1
▪ Asymptomatic ▪ Persistent generalised lymphadenopathy
Clinical Stage 2
▪ Unexplained moderate weight loss (<10% of presumed or measured body weight) ▪ Recurrent respiratory tract infections (sinusitis, tonsillitis, otitis media and pharyngitis) ▪ Herpes zoster ▪ Angular cheilitis ▪ Recurrent oral ulceration ▪ Papular pruritic eruptions ▪ Seborrhoeic dermatitis ▪ Fungal nail infections
Clinical Stage 3
▪ Unexplained[2] severe weight loss (>10% of presumed or measured body weight) ▪ Unexplained chronic diarrhoea for longer than 1 month ▪ Unexplained persistent fever (above 37.5°C intermittent or constant, for longer than 1 month) ▪ Persistent oral candidiasis ▪ Oral hairy leukoplakia ▪ Pulmonary tuberculosis ▪ Severe bacterial infections (such as pneumonia, empyema, pyomyositis, bone or joint infection, meningitis or bacteraemia) ▪ Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis ▪ Unexplained anaemia (<8g/dL), neutropenia (<0.5 x 109 per litre) and/or chronic thrombocytopaenia (<50 x 109 per litre)
Clinical Stage 4[3]
▪ HIV wasting syndrome ▪ Pneumocystis pneumonia ▪ Recurrent severe presumed bacterial pneumonia

[1] WHO clinical staging and immunological classification of HIV and AIDS and case definitions of HIV and related conditions. August 2006. http://www.who.int/hiv/pub/vct/hivstaging/en/index.html

[2] Unexplained refers to where the condition is not explained by other causes.

[3] Some additional specific conditions can also be included in regional classifications (such as reactivation of American trypanosomiasis [meningoencephalitis and/or myocarditis] in the WHO region of the Americas and penicilliosis in Asia).

- Chronic herpes simplex infection (orolabial, genital or anorectal of more than 1 month's duration or visceral at any site)
- Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs)
- Extrapulmonary tuberculosis
- Kaposi sarcoma
- Cytomegalovirus infection (retinitis or infection of other organs)
- Central nervous system toxoplasmosis
- HIV encephalopathy
- Extrapulmonary cryptococcosis including meningitis
- Disseminated nontuberculous mycobacterial infection
- Progressive multifocal leukoencephalopathy
- Chronic cryptosporidiosis
- Chronic isosporiasis
- Disseminated mycosis (coccidiomycosis or histoplasmosis)
- Disseminated mycosis (extrapulmonary histoplasmosis or coccidiomycosis)
- Recurrent septicaemia (including nontyphoidal Salmonella infection)
- Lymphoma (cerebral or B-cell non-Hodgkin)
- Invasive cervical carcinoma
- Atypical disseminated leishmaniasis
- Symptomatic HIV-associated nephropathy or symptomatic HIV-associated cardiomyopathy

APPENDIX 7-C: WHO Clinical Staging of HIV/AIDS for Children with Confirmed HIV Infection[1]

To be used for infants and children <15 years of age with confirmed HIV infection

Clinical Stage 1
▪ Asymptomatic ▪ Persistent generalised lymphadenopathy
Clinical Stage 2
▪ Unexplained persistent hepatosplenomegaly[2] ▪ Papular pruritic eruptions ▪ Extensive wart virus infection ▪ Extensive molluscum contagiosum ▪ Fungal nail infections ▪ Recurrent oral ulcerations ▪ Unexplained persistent parotid gland enlargement ▪ Lineal gingival erythema ▪ Herpes zoster ▪ Recurrent or chronic upper respiratory tract infections (otitis media, otorrhoea, sinusitis or tonsillitis)
Clinical Stage 3[3]
▪ Unexplained moderate malnutrition not adequately responding to standard treatment ▪ Unexplained persistent diarrhoea (14 days or more) ▪ Unexplained persistent fever (above 37.5° intermittent or constant, for longer than 1 month) ▪ Persistent oral candidiasis (after first 6–8 weeks of life) ▪ Oral hairy leukoplakia ▪ Acute necrotizing ulcerative gingivitis or periodontitis ▪ Lymph node tuberculosis ▪ Pulmonary tuberculosis ▪ Severe recurrent presumed bacterial pneumonia ▪ Symptomatic lymphoid interstitial pneumonitis ▪ Chronic HIV-associated lung disease including bronchiectasis ▪ Unexplained anaemia (<8g/dL), neutropaenia (<0.5 x 109 per litre) or chronic thrombocytopaenia (<50 x 109 per litre)

[1] WHO clinical staging and immunological classification of HIV and AIDS and case definitions of HIV and related conditions. August 2006. http://www.who.int/hiv/pub/vct/hivstaging/en/index.html

[2] Unexplained refers to where the condition is not explained by other causes.

[3] Some additional specific conditions can also be included in regional classifications (such as reactivation of American trypanosomiasis [meningoencephalitis and/or myocarditis] in the WHO region of the Americas, penicilliosis in Asia and HIV-associated rectovaginal fistula in Africa).

Clinical Stage 4

- Unexplained severe wasting, stunting or severe malnutrition not responding to standard treatment
- Pneumocystis pneumonia
- Recurrent severe bacterial infections (e.g. empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia)
- Chronic herpes simplex infection (orolabial or cutaneous of more than 1 month's duration or visceral at any site)
- Extrapulmonary tuberculosis
- Kaposi sarcoma
- Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs)
- Central nervous system toxoplasmosis (after 1 month of life)
- HIV encephalopathy
- Cytomegalovirus infection (retinitis or cytomegalovirus infection affecting another organ, with onset at age >1 month)
- Extrapulmonary cryptococcosis (including meningitis)
- Disseminated endemic mycosis (extrapulmonary histoplasmosis, coccidiomycosis)
- Chronic cryptosporidiosis
- Chronic isosporiasis
- Disseminated nontuberculous mycobacterial infection
- Cerebral or B-cell non-Hodgkin lymphoma
- Progressive multifocal leukoencephalopathy
- Symptomatic HIV-associated nephropathy or HIV-associated cardiomyopathy

APPENDIX 7-D: Information about Antiretroviral Medications

Stavudine (d4T)	Well tolerated ▪ Nausea ▪ Diarrhoea	Seek care urgently at CTC for: ▪ Severe abdominal pain ▪ Fatigue ▪ Shortness of breath Seek advice soon for: ▪ Tingling, numbness or painful extremities
Emtricitabine (FTC)	Well tolerated ▪ Headache ▪ Fatigue ▪ Nausea	Seek advice soon for: ▪ Changes in fat distribution (associated with long-term use) – Arms, legs, buttocks, and cheeks become thin – Breasts, belly, and back of neck become fat
Lamivudine (3TC)	Well tolerated ▪ Headache ▪ Nausea ▪ Diarrhoea	Seek advice soon for: ▪ Changes in fat distribution (associated with long-term use) – Arms, legs, buttocks, and cheeks become thin – Breasts, belly, and back of neck become fat
Nevirapine (NVP)	Well-tolerated ▪ Nausea ▪ Diarrhoea	Seek care urgently at CTC for: ▪ Severe rash with peeling ▪ Signs of liver toxicity: ▪ Jaundice/yellow eyes ▪ Severe nausea and fatigue
Tenofovir (TDF)	▪ Nausea ▪ Vomiting ▪ Diarrhoea ▪ Dizziness	Seek care urgently for: ▪ Yellow discolouration of skin and white of the eyes ▪ Dark coloured urine ▪ Clay coloured stool ▪ Patient passing scanty urine
Zidovudine (AZT)	▪ Nausea ▪ Diarrhoea ▪ Headache ▪ Fatigue ▪ Muscle pain ▪ Darkened finger- and toenails	Seek care urgently for: ▪ Pallor (anaemia) ▪ Severe fatigue
Efavirenz (EFV)	▪ Nausea ▪ Diarrhoea ▪ Headache ▪ Vivid dreams ▪ Difficulty sleeping ▪ Memory problems ▪ Dizziness	Seek care urgently for: ▪ Psychiatric/mental health problems Seek care at the CTC if you are on EFV and you become pregnant.

Adapted from: World Health Organisation *Chronic HIV Care with ARV Therapy and Prevention*. *Integrated Management of Adolescent and Adult Illness (IMAI)* DRAFT February 2006.

Common side effects	Basic symptom management
Nausea	Take medication with food. If on AZT, reassure patient that that this is common and usually self-limited. Treat symptomatically. If this persists for more than 2 weeks (14 days) or worsens, call for advice or refer to CTC.
Headache	Give paracetamol. Assess for meningitis. If on AZT or EFV, reassure patient that this is common and usually self-limiting. If condition persists more than 2 weeks (14 days) or worsens, call for advice or refer to CTC.
Diarrhoea	Hydrate. Follow clinic protocol for managing diarrhoea. Reassure patient that if diarrhoea is due to ARV, it will improve in a few weeks. Follow up in 2 weeks. If not improved, call for advice or refer to CTC.
Fatigue	Consider anaemia, especially if on AZT. Check haemoglobin. Fatigue commonly lasts 4 to 6 weeks especially when starting AZT. If severe or longer than this, call for advice or refer to CTC.
Anxiety, nightmares, psychosis, depression	This may be due to EFV. Give EFV at night; counsel and support (conditions usually last <3 weeks). Call for advice or refer for severe depression or psychosis or suicidal tendencies. Initial difficult time can be managed with locally available antidepressants or sleep medications.
Blue/black nails	Reassure patient that this is common with AZT.
Rash	If patient is on NVP or abacavir (ABC), assess carefully at the CTC. If rash is severe and has wet lesions or if there is crusting or ulceration of the mouth or genitals with peeling skin, stop NVP immediately and refer to hospital. This may be Stevens-Johnson's syndrome. If there is a flu-like illness associated with a generalised rash after starting ABC, stop the medication and refer to a CTC. This may be a hypersensitivity reaction.
Fever	Check for common causes of fever such as malaria. Call for advice or refer to CTC. Fever could be a side effect, an opportunistic or other new infection, or immune reconstitution syndrome.
Yellow eyes (jaundice)	Stop all medications immediately. If possible, test liver enzymes and refer to CTC.
Abdominal or flank pain	Abdominal pain may be pancreatitis from ddI or d4T. If jaundice or liver tenderness, send for ALT test and stop ARV treatment. Nevirapine is most common cause. Call for advice or refer to

Common side effects	Basic symptom management
	CTC.
Pallor: anaemia	If possible, measure haemoglobin. Refer, consult and stop AZT if severe pallor or symptoms of anaemia are present or haemoglobin is very low (<7.5 g/dL).
Tingling, numbness or painful feet/legs	If new or worse on treatment, call for advice or refer to CTC. If patient is on d4T-3TC-NVP, they should have the d4T discontinued. Substitute AZT if no anaemia. Check haemoglobin.
Cough or difficult breathing	This could be immune reconstitution syndrome. If taking ABC, this could be a hypersensitivity reaction requiring referral to the CTC.
Changes in fat distribution	Discuss carefully with your patient. Usually a benign side effect of the protease inhibitor class.

Adapted from: World Health Organisation *Chronic HIV Care with ARV Therapy and Prevention. Integrated Management of Adolescent and Adult Illness (IMAI)* DRAFT February 2006.

Appendix 9-A National PMTCT Indicator Matrix

	Indicator Description	Numerators	Denominators
1a	Percentage of pregnant women who know their HIV serostatus	Number of pregnant women coming to ANC with known positive + Number of pregnant women tested and received results at ANC + Number of women tested and received results at L&D	Estimated number of pregnant women from population
2a	Percentage HIV-infected pregnant women who receive ARVs to reduce risk of MTCT	Number of HIV Positive pregnant women who receive AZT at ANC + + Number of HIV Positive pregnant women who receive NVP, AZT and 3TC at L&D for the first time + Number of HIV positive pregnant women who are on ART at ANC + those started ART at labour"	Estimated number of HIV infected pregnant women by NBS
3a	Percentage of HIV-exposed infants who received ARV prophylaxis	Number of HIV-exposed infants who received NVP prophylaxis at L&D	Estimated number of HIV infected pregnant women by NBS
5	Percentage of HIV infected women receiving infant feeding counselling/support at the first infant follow-up visit	Number of HIV infected women receiving infant feeding counselling/support at the first infant follow-up visit.	Estimated number of HIV infected pregnant women through PMTCT
a	Percentage of HIV-exposed infants receiving DNA PCR test by age 4-6 weeks	Number of HIV-exposed infants receiving HIV DNA PCR) by 4-6 weeks	Estimated number of HIV positive pregnant women
b	Percentage of HIV-exposed infants receiving DNA PCR test by age 4-6 weeks	Number of HIV-exposed infants receiving HIV DNA PCR) by 4-6 weeks	Number of HIV-exposed infant registered
7a	Percentage of HIV-exposed infants receiving HIV test (antibody or DNA PCR) by age of 18 months	Number of HIV-exposed infants receiving HIV test (antibody or DNA PCR) by age of 18 months	Total number of live birth HIV-exposed infants in L&D
7b	Percentage of HIV-exposed infants receiving any HIV (antibody or DNA PCR) by age of 18 months	Number of HIV-exposed infants receiving any HIV test (antibody or DNA PCR) by age of 18 months	Total number of exposed Infants enrolled in follow up visit
8	Percentage of HIV-exposed children tested and confirmed HIV positive by 18 months	Number of HIV-exposed children tested with confirmed HIV Positive by 18 months	Total number of live birth HIV-exposed infants in L&D

	Indicator Description	Numerators	Denominators
9a	Percentage HIV-exposed infants initiated cotrimoxazole prophylaxis by 2months of age.	Number of HIV-exposed infants initiated cotrimoxazole prophylaxis by 2months of age.	Total number of live birth HIV-exposed infants in L&D
9b	Percentage of HIV-exposed infants initiated cotrimoxazole prophylaxis by 2 months of age	Number of HIV-exposed infants initiated cotrimoxazole prophylaxis by 2months of age	Total number of exposed infants enrolled into PMTCT for follow up visit
10	Percentage of postpartum HIV infected women who receive family planning services	Number of postpartum HIV infected women who receive family planning services	Estimated number of HIV infected pregnant women
10b	Percentage of postpartum HIV infected women who receive family planning services	Number of postpartum HIV infected women who receive family planning service	Number of HIV infected women accessing postpartum services
11	Percentage of male partners of pregnant women who tested and receive results at ANC	Number of male partners of pregnant women who tested and receive results at ANC	Number of pregnant women tested at ANC

Appendix 9-B Adverse Drug Reaction Reporting Form

TANZANIA FOOD AND DRUGS AUTHORITY

REPORT OF SUSPECTED ADVERSE REACTION TO MEDICINES OR VACCINES

Note: Identities of reporter, patient and institution will remain confidential

I. PARTICULARS OF PATIENT	
Patient Initials or Record No: _____	Sex: ❑ Male ❑ Female
Date of Birth (dd/mm/yyyy) or age: ___/____/_____	Weight in kg: _____

II. DETAILS OF ADVERSE REACTION	
Description of reaction: _____ _____ _____ _____	Date Reaction Started: ___/____/_____ Date Reaction Stopped: ___/____/_____ (if known)**:** Onset latency: _____

Health related information: Medical history (e.g. hepatic, renal, HIV), allergies, pregnancy, smoking, alcohol use, etc. ***Please write any relevant medical and laboratory results including dates (if done)***: _____

_____

III. DETAILS OF SUSPECTED MEDICINE/VACCINE USED

Name of suspected medicine(s)/ vaccine(s) (Specify brand name or manufacturer if known).	**Dosage**	**Frequency**	**Route**	**Therapy Date**		**Batch. No. & Expiry date (If known)**	**Reason for use**
				Start	**Stop**		
Other medicines used at the same time and or one month before (including herbal medicines)							

IV. MANAGEMENT OF ADVERSE REACTION	
Reaction subsided after stopping the suspected drug/reducing the dose: ❑ Yes ❑ No ❑ Unknown	
Reaction reappeared after reintroducing drug: ❑ Yes ❑ No ❑ Not applicable	
Seriousness of the Reaction **(please tick all that apply):**	
❑ Discomfort but able to work	❑ Caused persistent disability or incapacity
❑ Discomfort could not work	❑ Caused a congenital anomaly
❑ Required or prolonged hospitalization	❑ Patient Died
❑ Life threatening	❑ Others, please give details: _____

Treatment of adverse reaction: ❑ No ❑ Yes **(if yes please specify):** _____

Outcome of the reaction ❑ Not yet recovered ❑ Recovered (Date): ___/____/_____ ❑ Died (Date): ___/____/_____ ❑ Unknown

Cause of death: _____

V. THERAPEUTIC FAILURE

PLEASE WRITE IF THE MEDICINE(S)/VACCINE(S) SHOWED LACK OF EFFICACY BELOW : (Continue at the back)

VI. MEDICATION ERRORS AND OVERDOSAGE

PLEASE WRITE DETAILS OF MEDICATION ERRORS AND OVERDOSAGE BELOW:

PLEASE WRITE ANY OTHER RELEVANT ADDITIONAL INFORMATION BELOW :

VII. PARTICULARS OF REPORTER /HEALTH CARE PROVIDER

Name:	Profession:	Name and Address of the health facility:
Contact phone number:	E-mail:	
Signature	Date of this report	

❑ *Please tick if you wish to receive information about other local reports associated with the suspected drug(s)*

Thank you for your cooperation	***Submission of an ADR case report does not discredit the competence of the reporter.***	***Ref No. (for official use)***

PMTCT TANZANIA

This website is the result of collaboration between the Ministry of Health and Social Welfare and PMTCT implementing partners in Tanzania. It is designed and managed by the François-Xavier Bangoud (FXB) Center with funding from The US Centers for Disease Contol and Prevention.

Facts, Statistics, Strategy.

RESOURCES

Downloads and links for PMTCT providers, including National Guidelines, healthworker job aids, monitoring and evaluation documents, and patient education materials.

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Global report: UNAIDS report on the global AIDS epidemic 2013...

Practical Infoormation and Guidance for Integration on MNCH and HIV Programs...

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Links and downloads of recommended journal and news articles.

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Pediatric AIDS in the Elimination Agenda

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New and Noteworthy

Preparations to roll out Option B plus in Tanzania

The Ministry of Health and Social welfare (MoHSW) held a PMTCT stakeholder's meeting late in August in preparation for rolling out Option B plus for PMTCT in Tanzania. Option B Plus will provide an opportunity for HIV positive pregnant women and breastfeeding mothers to start lifelong antiretroviral treatment immediately after diagnosis regardless of World Health Organization clinical staging or CD4 levels.

The roll-out will be in two phases where by the first phase will involve regions with high HIV burden and the second phase will cover the rest of the rgions. The MOHSW planning for a country-wide coverage by June 2014

Option B plus

Let Us Know What You Think

Please take a survey about our new site.

This publication was made possible through generous support of the American people through the U.S. President's Emergency Plan for AIDS Relief in collaboration with FXBT Health and Ministry of Health and Social Welfare of the United Republic of Tanzania.

TANZANIANS AND AMERICANS IN PARTNERSHIP TO FIGHT HIV/AIDS

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