The United Republic of Tanzania

Ministry of Health and Social Welfare

National Guidelines for

Comprehensive Care of Prevention of Mother-to-Child Transmission of HIV Services

3rd Edition,
June 2012

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Abbreviations and Acronyms

3TC	Lamivudine
ABC	Abacavir
AFASS	Acceptable, feasible, affordable, sustainable and safe
AIDS	Acquired immune deficiency 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
EID	Early Infant Diagnosis
ELISA	Enzyme-linked immunosorbent assay
EPI	Expanded Program on Immunization
FTC	Emtricitabine
HAART	Highly active antiretroviral therapy
HCW	Healthcare worker
HIV	Human immunodeficiency virus
HLD	High-level disinfection
HPV	Human papillomavirus
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 AND AIDS
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 Organisation
ZDV	Zidovudine, the generic name for azidothymidine (AZT)

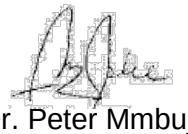
Acknowledgements

Tanzania's National Guidelines on Prevention of Mother-to-Child Transmission of HIV (PMTCT) would not have been done without the support and contributions of a large number of individuals and organisations, and the Ministry of Health and Social Welfare (MoHSW) gratefully acknowledges the sincere dedication and hard work of these numerous individuals and organisations.

The MoHSW also wishes to express sincere appreciations to the able leadership and guidance of the PMTCT Programme and 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.

The MoHSW is grateful to the US Centers for Disease Control and Prevention (CDC) for its valuable assistance and unwavering support for funding.

The MoHSW, through the Reproductive and Child Health Section, further extend special thanks to the National PMTCT Programme staff for their guidance; PMTCT implementing partners for their contributions; and to the team from the François-Xavier Bagnoud (FXB) Center in Tanzania and at the University of Medicine & Dentistry of New Jersey for their dedication in facilitating this review.



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Foreword

The government of Tanzania has endorsed several Global commitments and the respective plans of actions, including MDGs 4, 5 and 6; 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 (2009) and The Health Policy (2007).

Implementation of the PMTCT programme complements the above efforts and also contributes to the commitment to combat HIV as reflected in the National Strategy for Growth and Reduction of Poverty (NSGRP).

The MoHSW has been implementing PMTCT services in the country since 2000 and scale-up and roll-out was done from 2003 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 2010, the WHO provided new recommendations on the implementation of PMTCT, based on new scientific evidence. These recommendations provide guidance to countries on how to significantly reduce HIV transmission from mother-to-child. The recommendations represent a significant shift in current practice, including revision of the CD4 threshold for initiation of antiretroviral therapy (ART), time for initiation and duration of prophylaxis for PMTCT, as well as more effective treatment and prevention regimens. Moreover, the new recommendations call for the extension of the duration of breastfeeding for women living with HIV up to one year with relatively safe infant feeding options.

The recommendations and the scientific findings compelled us 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.

These updates, together with the effective implementation and scale-up of PMTCT services, offer an opportunity to significantly improve maternal health and reduce HIV infection in infants and children in Tanzania. However, with the new global focus on elimination of MTCT by 2015, it is expected that the strategic roll-out and implementation of these Guidelines will have a tremendous contribution to an immediate achievement of this global initiative.

It is envisaged that these guidelines will be used as a reference for different stakeholders, including those in research, learning and health facilities and institutions, and 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 training to emphasise these changes.

As information and knowledge about HIV and AIDS continues to evolve, the MoHSW will remain committed to staying 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, ARV prophylaxis and treatment for mothers and children, safer delivery practices, counselling and support for safer infant feeding practices, long-term follow-up care for mother and child and family planning.
- Routine, provider-initiated HIV testing is the recommended strategy for HIV testing in Tanzania's RCH services. All women of reproductive age and their partners should receive HIV testing and counselling as a routine procedure in reproductive and child health (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 refuses.
- All clients who are tested for HIV should receive post-test counselling regardless of their HIV status. The HIV test result should always be given in person within the same day of testing
- Nationally, the diagnosis of HIV infection in adults is established by detecting HIV antibodies using simple rapid tests according to the national HIV rapid testing algorithm.
- In order to definitively diagnose HIV infection in children less than 18 months of age, HIV viral testing using 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, (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.
- All clients who are tested for HIV should receive post-test counselling regardless of their HIV status. The HIV test result should always be given in person.
- Antenatal care (ANC) for women infected 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 infected with HIV.
- Pregnant women who are HIV infected and eligible for ART for their own health should be offered combination ART regardless of gestational age in accordance with national guidelines.
- ART is recommended for women living with HIV in the following situations:
  - WHO clinical stage 3 OR 4 regardless of CD4 count
  - CD4 cell count less than or equal to 350 cells/mm3
  - ART can start at any point during a woman's pregnancy. Treatment should start as soon as possible, even if she is in the first trimester. The first-line ART for pregnant women is zidovudine (AZT) 300 mg twice daily (BD) + lamivudine (3TC) 150 mg BD + nevirapine (NVP) 200 mg BD.
- Pregnant women who do not need ART for their own health should be given ARV prophylaxis starting at ANC. ARV prophylaxis regimens for the mother and child should be offered at all PMTCT sites
- The recommended combination ARV prophylaxis regimen for women who present at ANC is AZT 300 mg BD from 14 weeks of gestation or anytime thereafter. Single-dose NVP 200 mg (if AZT was provided for less than 4 weeks) is given at onset of labour; AZT 300 mg and 3TC 150 mg given every 12 hours until delivery. During the postpartum

period, AZT 300 mg BD and 3TC 150 mg BD is continued for 7 days only if AZT was taken for less than 4 weeks prior to delivery.

- All infants born to women living with HIV should receive daily NVP as soon as possible after delivery regardless of whether the mother has received or not received ART or prophylaxis. For breastfed infants, daily NVP should be given as soon as possible and continue until one week after complete cessation of breastfeeding. For formula fed infants; daily NVP should continue for six weeks.
- In addition to providing ARV prophylaxis, healthcare facilities should also practice safer obstetric practices that reduce the risk of MTCT. 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. Complimentary 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.
- If the infant or child is breastfeeding, HIV testing should be repeated 6 weeks after the complete cessation of breastfeeding, regardless of the testing methodology that is used.
- Every infant born to a mother living with HIV should receive CPT to prevent opportunistic infections beginning at 4 weeks of age or as soon as possible thereafter.

CHAPTER 1: Introduction

1.1 Development and use of the national PMTCT guidelines

The *National Guidelines for the Prevention of Mother-to-Child Transmission of HIV* 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 2010 WHO recommendations for PMTCT and infant feeding. They were developed under the direction of the 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. This document replaces the May 2007 edition of the national PMTCT guidelines.

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). In addition to defining standards for patient care, 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.

Data from 2009 indicates that approximately 68% of the estimated 33.3 million adults and children living with HIV were from Sub Saharan African (22.5 million). Almost 3/4th of all adult and child deaths due to AIDS occurred in sub-Saharan Africa: 1.3 million of the global total of 1.8 million. However, the number of AIDS-related deaths in sub-Saharan Africa has decreased due to the increasing availability of antiretroviral (ARV) medications.
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 2.5 million (at the end of 2001 that figure was 2.0 million). Approximately 90% of these children live in sub-Saharan Africa (2.3 million).

Despite these gloomy statistics, the global community and national governments have made great strides over the years in combating the disease by informing their populations, training HCWs, scaling-up programs and services, and monitoring progress. For example, 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. Globally, deaths among children younger than 15 years of age are also declining. The estimated 260,000 children who died from AIDS-related illnesses in 2009 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 for children.

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 6% of adults age 15–49 were infected with HIV. However, this number has been on the decline since it peaked at 8% in 1997.

Best estimates suggest that rural HIV prevalence (5%) is lower than that of urban areas (9%) (TACAIDS 2009). HIV prevalence is slightly higher among women (7%) than men (5%) and is even higher for women attending antenatal clinics (8.2% in 2006). This epidemic has caused the death of many people, including many young men and women at their most productive age. AIDS-related mortality rates among children under five years of age are also increasing. 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 1.8% in Kigoma region to 15.7% in Iringa region (THMIS 2007-08). This implies that several different drivers are responsible for the epidemic in different parts of the country. 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, much progress has been made in combating HIV and AIDS. 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 antenatal mothers 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 ARV medications continues to grow nationwide. Similarly, annual number of AIDS deaths has been on the decline.

However, HIV and AIDS remain a major threat to the country's poverty reduction and economic development goals and is one of the greatest national development challenges. The Health Sector HIV/AIDS Strategic Plan (2008–2012) is intended to consolidate interventions that will prevent HIV infections and reduce HIV vulnerability among the Tanzanian population. All those who are infected and affected will receive treatment, care and support.

The annual number of new infections exceeds by far, the number of individuals enrolled into antiretroviral (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 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. However, unlike women in other regions of the world, African women 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. For example, biologically, HIV is more easily transmitted from men to women than from women to men. Furthermore, 11% of young women and 10% percent of young men aged 15 to 24 in Tanzania have had sex before the age of 15 and women tend to have sexual partners who are older than they are. These men are more likely than younger men to be HIV infected.

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
- Failure to seek treatment for 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

Youth — both boys and girls — are particularly vulnerable to HIV infection because they lack HIV knowledge and risk-reduction skills, and they have limited access to healthcare services such as HIV testing and counselling and treatment for STIs.

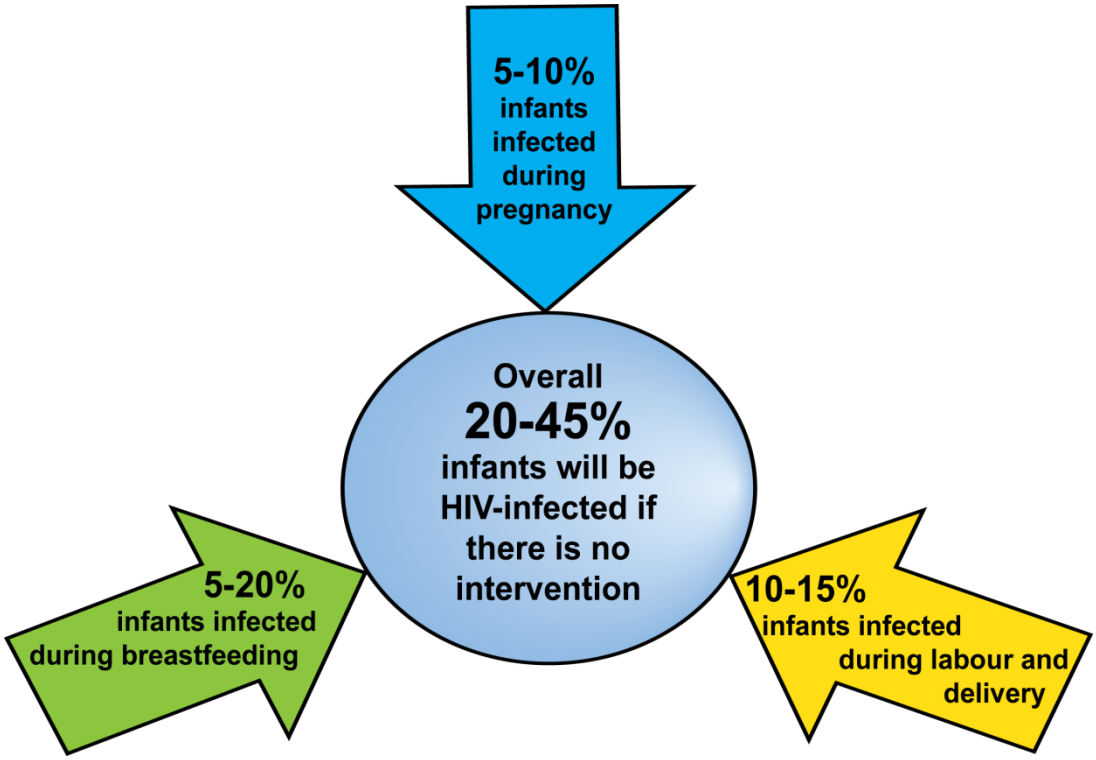
It is important to consider the influence of gender on vulnerability to HIV infection when working to prevent MTCT of HIV. This can only be addressed if both sexes appreciate their interrelated roles. Practices that increase the risk of MTCT can be modified once communities understand the relationship 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 new infections and in advanced stages of HIV disease (AIDS), increase the risk of MTCT.
- Viral subtypes and strains may also affect HIV transmission rates for example; MTCT rates are higher with HIV-1 infection than with HIV-2 infections.
- Obstetric and neonatal risk factors that increase the risk of MTCT, 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 (new infection or advanced AIDS) ▪ Viral, bacterial or parasitic placental infections (e.g., malaria) ▪ 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 reduce 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 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 infants infection; and an HIV Infants transmission 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

Because there is no cure for HIV, 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 Point

- Sexually active women and men should be encouraged to use safer sex practices including barrier methods such as condom use, to reduce the number of sexual partners and to 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 Point

- Gender concerns and equality should be considered when offering PMTCT services
- All health care providers should emphasise the 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.

Prevention of unintended pregnancies among women infected with HIV

It is every woman's right to have children.

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 Point

- 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 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 routine HIV education, testing and counselling for pregnant women and their partners, 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 thrive 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.

All women diagnosed with HIV infection should have clinical and immunological evaluation to assess their eligibility to receive ART. Care and treatment services to pregnant 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 ANC care	▪ Monitors pregnancy progress, diagnoses early and treat pregnancy related complications such as STIs and anaemia, prevents malaria and TB, educates mother on optimal nutrition ▪ Provision of preventative methods such as CPT for malaria
ART and prophylaxis	▪ Improves maternal health, which in turn improves child's survival chances and also reduces maternal viral load, which in turn reduces infant exposure to the virus and risk of MTCT
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 and nutrition, improves 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.
Infant follow-up and testing	▪ Monitors and manages signs and symptoms of infection in children exposed to HIV; ensures early HIV test and CPT for infants starting at 4 weeks of age; ensures confirmatory testing for infant after cessation of breastfeeding
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 the fight against 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 subject 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 (to mention a few). The loss of social status and decision-making power in the household and community can be devastating for those affected.

Although stigma is widespread, PLWHIV also 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 infected, 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. See Part VII of the Act in Appendix 3-A.

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: Testing and Counselling

4.1 Introduction

HIV counselling in PMTCT is a confidential dialogue between a client and healthcare provider aimed at enabling the client to make an informed personal decision about HIV testing in order to know their serostatus. HIV testing and counselling is a vital part of HIV and AIDS care and a fundamental part of good clinical management. *HIV testing and counselling should be accessible to all women of childbearing age and their partners*.

Role of the healthcare worker in counselling and testing

The healthcare worker's role in the PMTCT setting 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
- Assuring them on any misconceptions
- Assisting them to develop the self-confidence necessary to carry out their decisions

Benefits and risks of HIV testing for women and their partners

The primary advantage of HIV testing and counselling is that it helps people to learn of their HIV status and to make appropriate decisions based on this knowledge.

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

- Receive appropriate and timely interventions to reduce MTCT if they are pregnant
- 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 risk or drawback of HIV testing is the mental distress caused by fear of confidentiality breaches, stigma, domestic violence and knowing one's status.

When does testing and counselling occur?

HIV testing and counselling in PMTCT may occur at all stages: before pregnancy, during pregnancy, labour and delivery, postpartum care and child follow-up (Under-five clinics). Testing and counselling should involve not only pregnant women but also their partners and families.

Ongoing counselling is critical to ensure prevention against acquiring HIV (for HIV negative clients) and good adherence to interventions among those living with HIV.

4.2 Guiding principles of testing and counselling

Confidentiality

HIV test results and information that is shared between HCWs and clients during healthcare sessions must be confidential. This confidentiality is essential in establishing and maintaining 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, is 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, 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 that 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. Clients or patients declining an HIV test should be offered assistance to access HTC in the future. The decision to decline should be noted in their medical record so that a discussion of HTC can be reinitiated at subsequent visits to the health facility.

Practice Point

It is the responsibility of HCWs to make certain that the elements of informed consent are included in their HIV testing and counselling services. Clients should never be pressured or coerced into being tested.

Healthcare workers should:

- Ensure that clients understand the purpose and benefits of testing, counselling and PMTCT services
- Ensure that clients understand the testing and counselling process
- Respect the client's decision about being tested for HIV

Post-test counselling

A guiding principle of HIV testing and counselling 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 trained counsellor should inform clients about follow-up treatment, recommended and available care and support services and should offer support to help clients disclose their status when such support is needed. Further recommendations on post-test counselling are given later in this chapter and in Appendix 4-B: *Post-test Counselling Checklists*.

4.3 HIV testing and counselling strategy

Provider-initiated HIV testing

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

Provider-initiated testing helps make HIV testing a more "normal", routine part of ANC. This approach has been proven to significantly increase the number of women who test for HIV and 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/informed consent and post-test counselling).

Table 4.1: Differences and similarities between provider- and client-initiated HIV testing and counselling 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). ▪ Client is given the opportunity to ask questions and the HCW ensures that the	▪ 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

client understands HIV testing in the context of PMTCT. ▪ **Unless client opts out, HIV test is performed.**	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 Point

- All women of child bearing age, pregnant women and their partners, should receive HIV testing and counselling, as a routine procedure in RCH services.
- Under the routine, provider-initiated approach, women whose HIV status is unknown should receive information about HIV as a part of normal care and should be given the opportunity to ask questions about this information. HIV testing should then be performed unless the client opts out.

Practice Point

- Procedures that make women wait in special queues in order to receive testing (i.e., procedures that force women 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 and to support informed decision-making about HIV testing and PMTCT services. Pre-test information can be given during ANC, labour and delivery, during postpartum visits or when a mother/parent/guardian accompanies her child to an Under-Five clinic, depending upon when a client presents to RCH services. It is recommended that HIV pre-test information be given in a group information session. If the need arises, individual information sessions can be performed.

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 and discussion should be provided on an individual basis.

The purpose of this session is to:

- Increase client's knowledge and awareness of HIV
- Support client's informed decisions about HIV testing and PMTCT services
- Increase client's knowledge about how to prevent HIV
- Help client's 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
- Explain that all women will also have individual counselling

During these sessions, HCWs should share information with clients, yet be careful to refrain from dominating the session and to ensure that all participants have the opportunity to speak and ask questions. Healthcare workers conducting these sessions should have the basic counselling skills necessary to encourage clients to be open and participatory 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 and AIDS and MTCT
- Share information on benefits for testing and counselling in RCH
- Provide information about HIV infection in pregnancy and the risk of MTCT
- Discuss the meaning of HIV testing and the possible implications of negative and positive results
- Explain when the test results will be available
- Discuss the window period and the need of repeat HIV testing later in pregnancy
- Discuss the advantages of couple counselling
- Talk about the benefits and possible disadvantages of sharing the HIV test results with sexual partners
- Discuss the persons with whom clients should share HIV test results (e.g., mother, sister, in-laws etc.)
- Discuss the interventions available to prevent MTCT and care for the mother and child if the test results are positive
- Discuss the benefits of early infant diagnosis to infants
- Provide information about how to prevent HIV infection, including safer sex practices
- Explain when the results will be available
- At the end of the session, allow enough time for questions and clarifications
- Encourage and support clients to ask questions

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

When clients opt-out of HIV testing

Clients who refuse 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 refusal should be documented as a reminder to offer HIV testing and counselling 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 for all clients

The following post-test counselling activities should be performed for *all* clients:

1. Ask the client if she has any questions and address them if you can.
2. Provide the HIV test result and assess the client's understanding of the meaning of the result.
3. Discuss partner HIV testing and the issue of discordance — the fact that her partner's HIV status may be different from her own.
4. Explore and encourage disclosure and partner testing, if such disclosure is safe and appropriate.
5. Provide HIV risk assessment and individualised risk-reduction plans. Encourage risk-reducing behaviour, including safer sex.
6. Provide the appropriate PMTCT essential messages according to the client's HIV status.
7. Offer appropriate information and referral according to women's HIV status.
8. Encourage and support follow-up 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.
9. Discuss retesting in the third trimester if the women tested negative

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 exclusive breastfeeding. Women should be informed that, if they become infected during pregnancy or during the time they are breastfeeding, they face an increased risk of MTCT.

Healthcare workers should also discuss family planning and safer sex, the issue of discordance and the desirability of partner testing. Women should be counselled about the need for repeat HIV testing in the third trimester after the initial test, in case the test was performed during the window period or in the event additional risk of exposure has occurred. Mothers should be encouraged to retest even after delivery through PITC services.

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 receive education about PMTCT. During counselling sessions, HCWs should:

- Discuss and support ARV prophylaxis or ART including CD4 testing and clinical staging
- Provide infant-feeding counselling and support infant feeding decisions.
- Provide information about the importance of delivering in a 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 to others, including safer sex practices and family planning. They should be supported to disclose their test results safely and appropriately to partners, family members and others. All women testing HIV positive and eligible for ART should be given a referral for ongoing follow up HIV care and Treatment for themselves. They should be encouraged to bring their partners and other children for HIV test. They should be informed that their exposed children will be followed up at the Under 5 clinic for HIV care and early diagnosis of their HIV status. All women who test positive should be assessed for eligibility for ART, and should be given appointments for ongoing follow-up HIV care and treatment for themselves, their partners, their HIV-exposed infants and other family members or provide referral where appropriate.

ARV adherence counselling for clients who are HIV-positive

- Make sure that clients know that ART is not a cure and that it requires a long-term commitment
- Prepare clients for the responsibility of taking and adhering to medications and their responsibilities for ensuring proper administration and adherence for child medication
- Explain to clients who are not currently eligible for ARV that prophylaxis is to prevent transmission of HIV from mother to the child and that it is a short-term medication
- Review each medication in the ARV regimen with clients. Discuss drug interactions and side effects
- Plan a dosing schedule that works for the client
- Remind clients of the food and beverage restrictions (if any exist)
- Help them understand that ARV medication only works if the pills are taken every day as prescribed
- Explore with clients possible barriers to adherence

4.6 Counselling couples

Couples may have different counselling needs than individuals and male partner participation in PMTCT programmes has been shown to be an important factor in the success and acceptance of a PMTCT programme within a community. 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, infant feeding choices and increase compliance to family planning methods of choice. Couples counselling is therefore a strategy that is highly recommended and encouraged by the Ministry of Health and Social Welfare. PMTCT healthcare workers should support the involvement of men in PMTCT services by providing and encouraging couples counselling that includes the key PMTCT counselling messages.

Considerations in counselling couples

In counselling couples, it is important to establish a relationship with each partner. Counsellors 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.

Counselling sessions should begin with an assessment of each person's understanding of HIV and AIDS. It is preferable to discuss possible HIV risks while partners are together in the abstract and remind the couple to focus on the present and future pointing out the indicators of increased risk. Discussing risk factors together will shorten duration for counselling, minimize provider's burn out, enhance trust, confidence and mutual understanding between the couple and the counsellor permit each person to assess his or her own behaviour alone with the HCW.

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

- Counsellors 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 CHCT

Consenting Couples

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

- Be counselled together and receive their test results together
- Disclose the test results to each other after testing
- Make decisions about disclosure to other persons together
- Discuss HIV risk concerns together and support one another

During counselling, HCWs should:

- Inform partners that they will receive the results together as a precondition for couple counselling

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 HIV counselling and testing for couples is so important.

Healthcare workers should let clients know that, even if they are pregnant and HIV negative, any of their potential sex partners could be positive, and that, if they become infected during pregnancy, the chances of MTCT increase.

- Mention the possibility of discordant results (when one partner is infected but the other is not), and prepare them for this possibility.
- Confirm the benefits of knowing one's HIV status and discuss concerns about the possible risk of such knowledge.
- Provide results and attend to emotional reactions
- Explain discordant results and discuss possible reasons for discordant results including e.g. window period
- Ask who else may be affected by the test results.
- Provide information on available PMTCT interventions (e.g., ARV prophylaxis).
- Discuss available psychosocial support
- Allow time for questions and summarise what you have discussed
- Provide appointment for a second test after four weeks for HIV-negative partner
- In case of discordant results, encourage condom use and initiation of ART for the partner living with HIV
- Be prepared to refer the couple for further counselling, if indicated.
- Be prepared to refer the couple for HIV care and treatment, when appropriate.

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 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 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 or patient with disclosing his or her HIV status to a partner or spouse. 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 with their sex partner(s), the importance of knowing their partner's HIV status, and the benefits of counselling and testing as a couple. They shall be encouraged to bring their partner to the RCH for provider-assisted mutual disclosure where the provider will also clarify any HIV related 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 in order to accept their HIV status and plan on how to live positively with HIV as couples.

Due to the high risk of HIV transmission among HIV discordant couples, HCWs should emphasize linking discordant couples with appropriate services and providing on-site follow-up counselling and support as needed. With the support of appropriate services and

uptake of risk-reduction behaviours such as correct, consistent condom use and adherence to antiretroviral therapy (ART), discordant couples can remain discordant for many years.

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

- Partners who are living with HIV shall be linked with care, treatment and support programmes
- HIV-uninfected male partners shall be linked with medical male circumcision programs.
- An HIV-uninfected partner in a discordant relationship shall be retested for HIV four weeks after the first discordance result, then each year, or 4 weeks after a potential exposure has occurred (e.g. unprotected sex). On-going risk reduction counselling and linkage to support groups.
- Condom demonstration, distribution and explanation of where to access more condoms as needed.
- Family planning counselling and distribution of contraceptives as appropriate.
- Pregnancy counselling and safer conception to couples who want to conceive.

The Ministry of Health and Social Welfare shall strengthen PMTCT programmes and systems to successfully link discordant couples with these follow-up services, and shall explicitly establish and/or strengthen data systems to track these linkages and ensure couples enrol in and receive follow-up services.

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

The confirmation of an HIV-positive diagnosis in an infant or child is difficult for parents. Support for parents or caregivers, which should ideally have begun in ANC, includes explaining the process of infant/child HIV testing, explaining the mechanism 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 parents and caregivers understand the infant testing process, the meaning of test results and the benefits of follow-up for final determination of HIV status. Before conducting HIV testing procedures for an infant or child, the HCW should:

- Review basic information (as needed) with the parents or care givers about MTCT and measures 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, keeping in mind the age of the child and the current infant feeding method
- Emphasise the importance of follow-up, CPT and ARV prophylaxis

- Discuss the availability of HIV care and treatment
- Assess the parent or 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 parent/caregiver as soon as possible
- Before speaking to the parent/caregiver, familiarise yourself with the facts about the infant
- 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 the need for any follow-up or confirmatory testing (following infant testing guidelines)
- Discuss CPT and ARV prophylaxis, as appropriate to the situation
- Discuss infant feeding, as appropriate to the situation
- Explore the need for social support
- Assess the parent or caregiver's understanding of the information provided
- Discuss post-test follow-up, which will vary according to the results of the test, the age of the child, infant feeding method and the specific needs of the child and family
- Discuss and arrange follow-up care for the infant
- Pay attention to the parent's or caregiver's ability to process and cope with the information provided
- Assess the parent/ caregiver's support system, identifying potential sources of social support, referring and providing support
- Discuss the care and treatment needs of the mother

4.8 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 PMTCT services become part of the existing network of services relevant to HIV and AIDS in order to build and maintain strong referral systems.

PMTCT HCWs should be familiar with additional follow-up services available in their communities. They should work with the counselling coordinator to develop and regularly update a directory of relevant HIV services available in their area. During counselling, HCWs should confirm that clients agree to referral and understand the necessity of the suggested

service. Clients should be given the location, time, contact name and agency to which they are being referred.

4.9 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 counselling information, individual post-test counselling should address the special needs of youth and women who are especially vulnerable to HIV infection. In counselling these women, the HCW should:

- Provide counselling about risk assessment and risk-reduction strategies appropriate to each individual's situation
- Counsel about behaviours that increase risk of HIV acquisition, such as injecting drug use
- Explore support systems and provide appropriate referrals
- Refer adolescents to youth support groups or nongovernmental organizations (NGOs)

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.

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

Although it may be difficult to offer counselling or obtain informed consent during labour, the provider-initiated approach to testing should be used. Provide HIV testing and counselling to women of unknown HIV status in the labour ward when it is feasible to do so. Healthcare workers should use clinical judgment regarding when to provide HIV testing and counselling to women in labour. Detailed post-test counselling should be provided to women after delivery.

Practice Point

- When a woman presents in early labour, provide information about HIV testing and perform the test unless the she refuses. When appropriate, offer ARV prophylaxis to mother and infant to prevent MTCT.
- When a woman presents in late labour (active phase), defer testing and counselling until after delivery. After delivery, provide information about PMTCT, offer counselling and perform the test unless the woman refuses. If the result is HIV positive, offer ARV prophylaxis for the infant.
- Women who receive HIV testing and counselling during labour should receive post-test counselling during the postpartum period before discharge.
- Women who are breast feeding, have been identified as HIV positive during the postpartum period or under five clinics visits and have a CD4 count of ≤ 350 should be initiated on ART

Practice Point

- Neither women nor their infants should be provided with ARV prophylaxis if the mother has not been tested for HIV and been found to be infected.
- Re-testing to HIV negative pregnant women should be done during the third trimester

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 as an indirect measure of the responses of the HIV infection. Typically, a person makes antibodies between 3 weeks and 6 weeks after infection, but occasionally the process takes as long as 3 months. The time between exposure to the virus and the time when antibodies are detectable 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 highly 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). All HCWs who will be performing rapid tests need to be trained in the specific protocols for the rapid HIV tests.

ELISA (enzyme-linked immunosorbent assay) antibody tests

ELISA tests are antibody tests that are used nationally 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.

Performing ELISA tests requires 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 and antigen tests detect the presence of HIV in the blood instead of detecting the presence of HIV antibodies. Examples of viral tests include HIV DNA- and RNA-PCR. Most RCH facilities have access to viral testing methods, and they should be used when available and appropriate. Viral tests, when they are available, are recommended for diagnosing infants under the age of 18 months. Antigen tests, such as p24 are not widely used locally due to their complexity.

Practice Point

- Rapid HIV tests are recommended for diagnosis of HIV in adults and pregnant women because of their accuracy, speed, cost effectiveness and acceptability.
- Virological tests are recommended for confirming the diagnosis in infants 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 should know how to interpret results and understand the testing procedure, including how to correctly dispose of all testing materials.

In performing HIV testing, HCWs should follow infection control procedures and Universal Precautions. Proper specimen collection procedures, including quality phlebotomy techniques, should be used and all samples should be labelled carefully and accurately. Tests should be conducted according to test kit instructions and special care should be taken to avoid the contamination of testing reagents. All HIV tests results should be recorded on the Mother's Health Card and on the appropriate PMTCT programme registers.

Serial testing

In serial testing, if the initial rapid HIV test yields a nonreactive result, then the client is concluded as uninfected (negative). However an initial reactive rapid HIV test result has to be confirmed by a different rapid HIV test on the same blood sample. If the results of those two tests differ, a third test is conducted using a different rapid test as a tiebreaker.

Practice Point

Nationally, a serial testing strategy is recommended in PMTCT settings because it is less costly and time consuming than other strategies. In serial testing, only one test is performed initially, and a second test is performed only if the first result is reactive.

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.

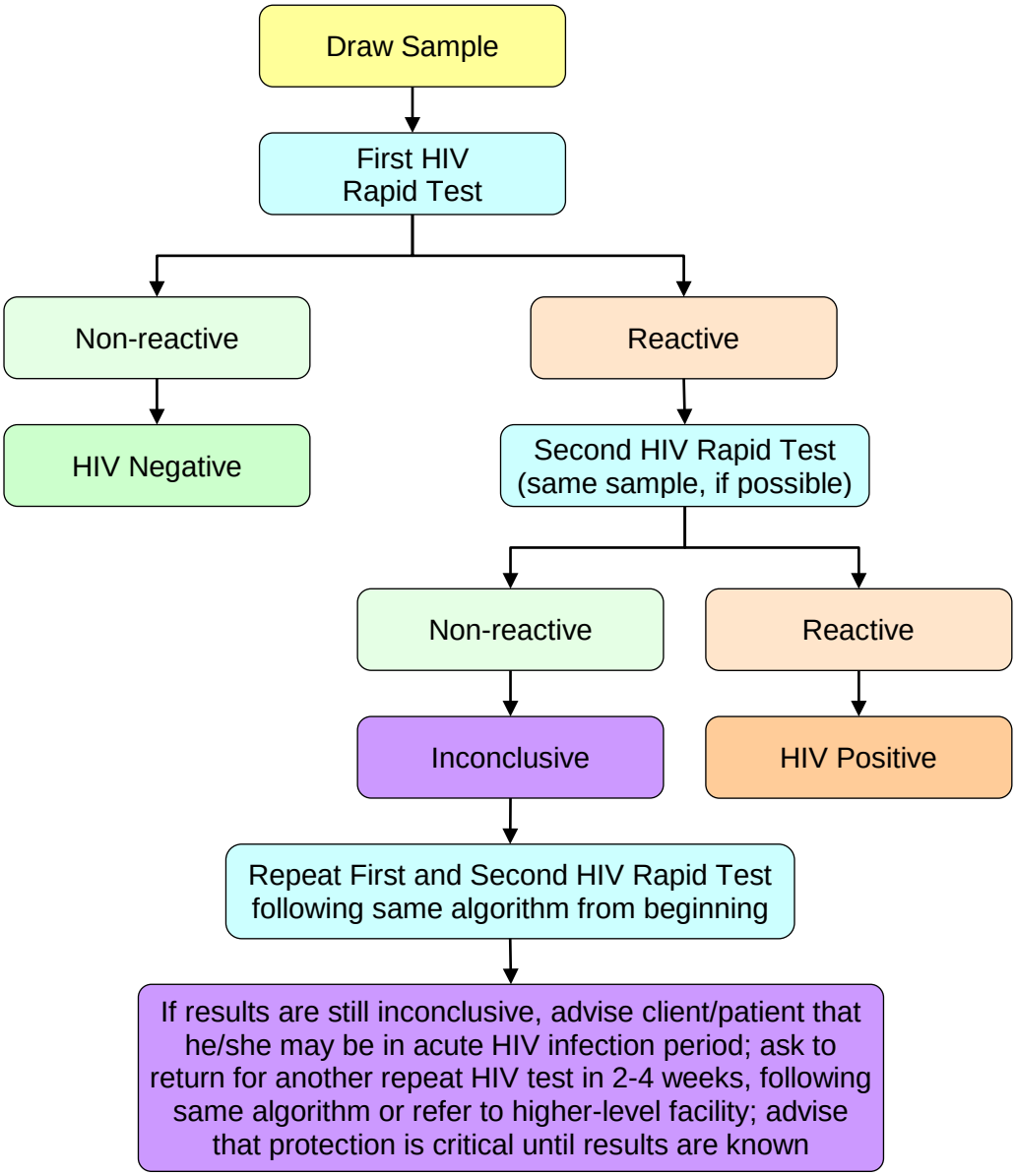
In Tanzania, the nationally approved HIV rapid testing algorithm utilizes a 'serial' testing strategy. That is, a blood sample is tested with one HIV test kit first, and a second test kit is

used only when the first HIV test kit revealed 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.

Annual assessments of the HIV rapid testing technology will be performed and the national testing algorithm updated based on the results of the assessments.

The current national HIV testing algorithms HIV rapid testing (18 months and older) is below.

Figure 4.1: Tanzania National HIV Rapid Testing Algorithm for Persons Aged Greater than 18 Months



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 definitely 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 that determine which test is most appropriate depending on resources. However, DNA PCR is considered the gold standard and is the preferred method of choice for diagnosis of 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. 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 and HCW can be trained to collect DBS for early infant diagnosis and only when trained should they be permitted to carry out DBS collections. DBS can be collected at any time and stored at the hospital laboratory until it can be delivered to the testing laboratory.

Types and Use of HIV tests for infants and children

The two types of tests used for early infant and child diagnosis of HIV are rapid antibody tests and DNA PCR. The use for each test depending on the age of the infant is 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.	PCR test not used for this age group.

In general, maternal HIV antibodies remains 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 since throughout this age period it is likely for infants to carry maternal antibody, which will not distinguish infection status. However rapid antibody testing should be used as a screening test to rule out infection in infants 9-18 months of age after complete cessation of breastfeeding.

Infants who are negative by antibody tests are most likely negative and do not need testing by DNA PCR.

Assessing HIV exposure and infection in infants and children

Early detection will identify the infants at highest risk for rapid progression, thus enabling healthcare providers to intensify clinical and immunologic monitoring and initiate ART when needed. HIV DNA 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*, DBS for diagnostic testing should be obtained 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 at the first point of contact with the health system. If negative, a second test should be performed 6 weeks after complete cessation of breastfeeding.

Most infants in Tanzania are breastfed for prolonged periods. Because breastfeeding poses an ongoing risk of mother to child transmission, a negative DBS-PCR in an HIV-exposed infant who is breastfeeding does not rule out HIV infection. Therefore assure parents to continue exclusive breastfeeding for the first 6 months of life; early cessation of breastfeeding is associated with higher morbidity and mortality. Continue CPT for the HIV exposed infant until HIV infection can be ruled out. Emphasise the need for follow-up.

All children with previously negative results should be tested for HIV infection 6 weeks after stopping breastfeeding.

Any infant/child who shows signs/symptoms of HIV infection should be tested immediately. Initiation of prophylaxis treatment should be done while waiting for test results if the infant meets presumptive diagnosis criteria (See Chapter 7 for more detailed information).

There are numerous potential venues for identification and follow up of HIV-exposed and infected infants. Health workers should be trained to offer antibody testing in any setting. However, every effort should be made to offer HIV testing for infants and children in the following sites:

- Infants/children admitted in paediatric wards,
- Infants/children attending outpatient department
- Infants/children attending TB clinics
- Infants/children whose mothers/fathers are attending 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 infants/children and infants/children of unknown exposure status.

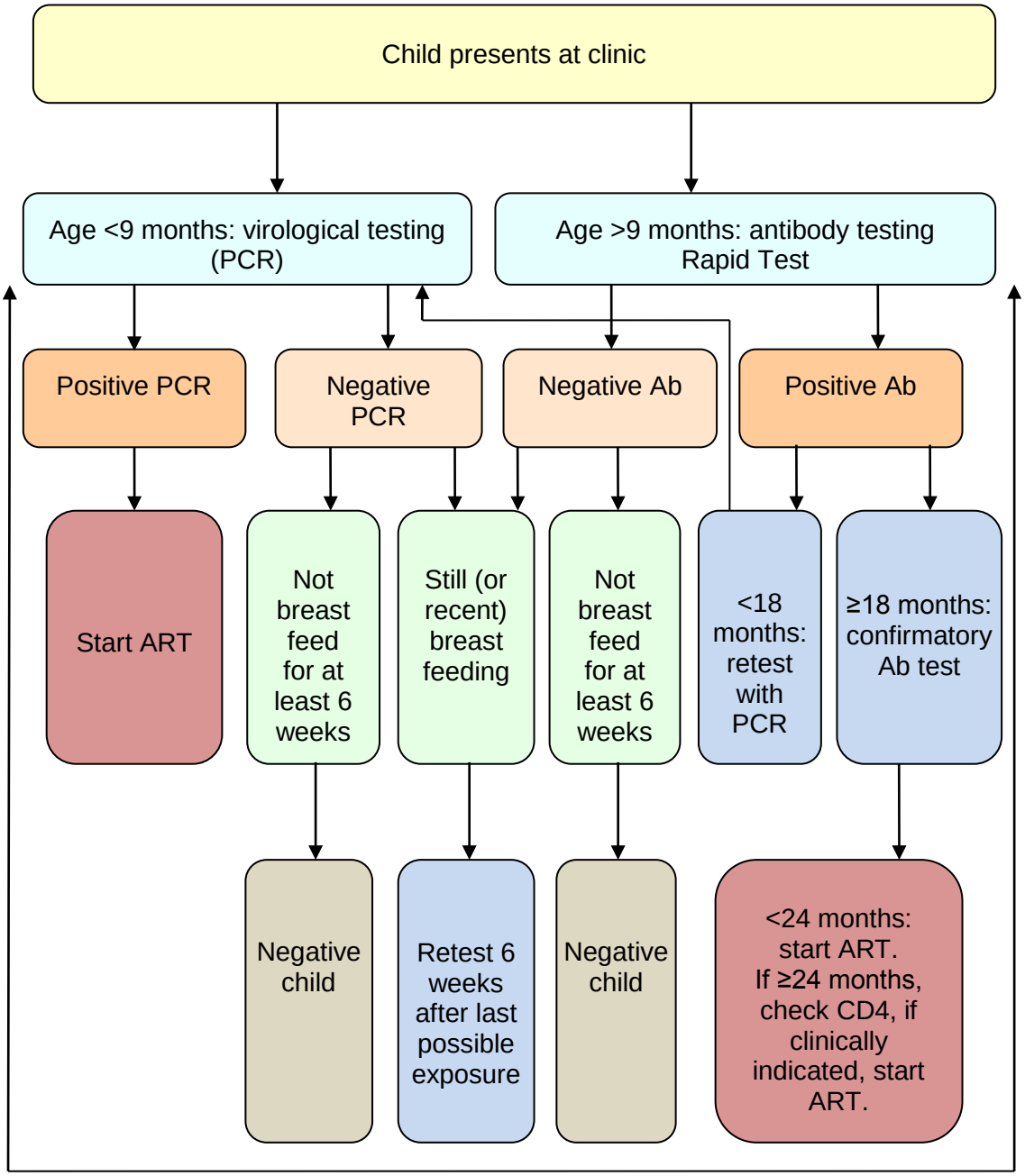
Table 4.3: Recommended HIV testing approaches for infants and children

Category	Test required	Purpose	Action
Known HIV-exposed infant (e.g. mother enrolled in PMTCT program)	DNA PCR testing at 4-6 weeks of age or first visit/contact (routine)	To diagnose HIV	If reactive, enrol in CTC/start ART
Infant or child less than 18 months – unknown HIV exposure	1. HIV antibody test of mother 2. HIV antibody test for infant if maternal status unknown	To assess HIV infection in mother and HIV exposure in infant	DNA PCR if either mother or infant antibody test is positive

Child over 18 months – unknown HIV status	HIV antibody test	To assess HIV infection status	If antibody positive, enrol in CTC
Infant or child with signs and symptoms suggestive of HIV	HIV antibody test	To assess HIV exposure or infection	▪ If antibody positive and <18 months, do confirmatory PCR test. ▪ If antibody positive and >18 months, enrol in CTC.
Infant or child who has stopped breastfeeding for >6 weeks	HIV antibody test	To assess HIV exposure or infection	▪ If antibody positive and <18 months, do confirmatory PCR test. ▪ If antibody positive and >18 months, enrol in CTC.
Known HIV-exposed infant at 9-months of age	HIV antibody test (routine)	To assess need for DNA PCR test.	▪ If antibody positive, do PCR test. ▪ If antibody negative and has stopped breastfeeding for > 6 weeks, infant is HIV-negative. ▪ If antibody negative and still breastfeeding, repeat Antibody 6 weeks after cessation.

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



a. If a child experiences HIV-related symptoms, regardless of prior test results, repeat testing even if child has not stopped breastfeeding.

Practice Point

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

- 4-6 weeks of age or at first health contact
- 9 months of age
- 6 weeks after complete cessation of breastfeeding
- Anytime they show signs and symptoms suggestive of HIV infection

Practice Point

RCH clinics and vaccination clinics are settings where most PMTCT activities occur. Linkages between RCH and other units (especially paediatric wards, out-patient clinics, TB clinics, and CTCs) should be strengthened to ensure proper implementation of HIV testing and follow-up, including DBS collection, storage, transportation, returning of results and data recording and reporting

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

Dried blood spots (DBS) should be obtained only by persons who have been appropriately trained in both the making of dried blood spots and in universal safety precautions. Blood can be collected at any time and stored until it can be delivered to the referring or testing laboratory.

DBS Collection

The information requested on the laboratory requisition form should be correctly completed and the DBS collected according to standard operational procedure The correct procedure for obtaining DBS should be adhered to in order to avoid injury to the infant. See Appendix 4-C for the step-by-step process of collecting DBS samples. In infants less than 2 months the medial or lateral aspect of the heel should be punctured and not the fingers due to the risk of hitting the bone. For infants older than 2 months the medial aspect of the big toe or the heel can be punctured. The fingers or small toes should not be punctured due to the risk of hitting the bone.

Drying DBS

Adequate drying of the filter paper is essential to ensure stability of the HIV viral DNA. Because insufficient drying adversely affects test results, DBS should be dried for at least 3 hours.

- Place DBS card on a horizontal drying rack to air dry until the sample is completely dry
- Keep DBS sample away from direct sunlight, dust, and insects
- Do not allow blood spots to come into contact with any surface or each other.

Packaging DBS

Once DBS are completely dry, they should be packaged according to the procedures outlined below:

- Place dried DBS card into glassine paper/ bag
- Place maximum of ten DBS card into Ziploc bag
- Add a minimum of two desiccants per specimen
- Add one humidity indicator card
- Remove air and seal bag

The plastic or foil bags used for DBS storage must be gas-impermeable.

Storage of DBS

DBS specimens should not be left under direct sunlight or in a vehicle, as sun and heat would deteriorate the specimens. Specimen packaging should happen soon after drying and no later than 24 hours after sample collection.

- Keep packaged DBS in a cool drawer away from pests until transported to the testing laboratory
- Place bag into envelope, add lab requisition form and specimen delivery checklist, clearly label outside of the envelope with the consignees and senders addresses

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 within seven (7) days by following the standard testing procedures (first in/first out) in order to reduce the turnaround time.

Returning of results and infant follow-up systems

Before any result is issued, a thorough verification must be done by a PCR Technologist and should be signed by both tester and verifier.

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

Printouts from district hospitals should be documented and sent to respective health facilities within the same day of receiving results (i.e. district/region to health facilities). SMS printed results should never replace the value of hard copy results. The laboratory should always ensure that hard copy results are sent to facilities even after sending the SMS.

Strategies to ensure efficient return of results should be developed and may vary according to the facility. Positive test results should be fast-tracked to the mother/baby pair as soon as possible to enable prompt initiation of ART and linkage to HIV care and treatment services.

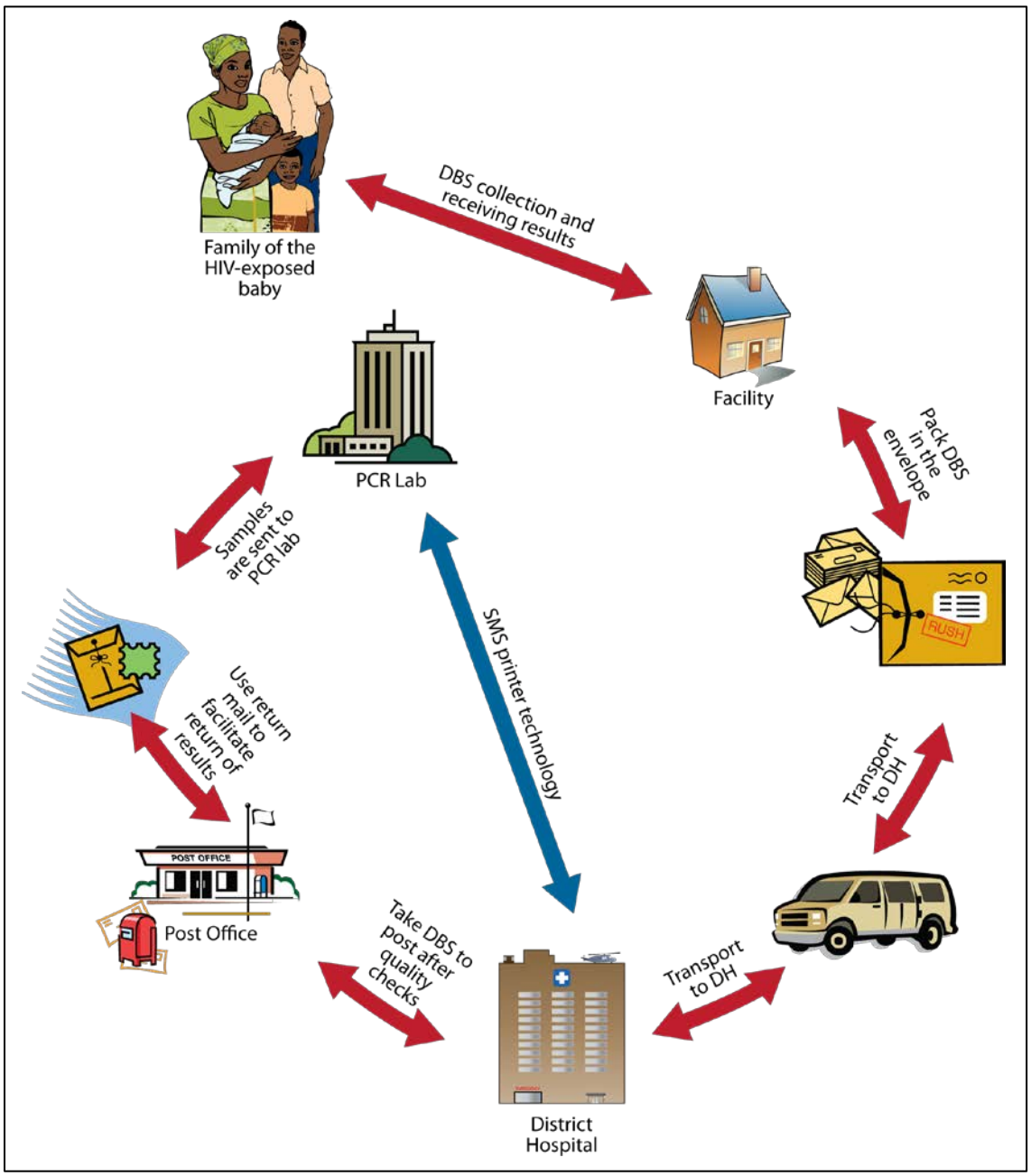
HIV-exposed infants should be discharged from care only after final determination of HIV infection status. This means majority of infants will have to be followed until 18 months of age. Clinics need to develop protocols to maximise adherence to care, identify those who do not return, and bring patients 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 workers, NGOs and peer educators to track families. When possible, HCWS should make phone calls to patients or make 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 child and bring him/her 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 section 7.4 of Chapter 7: *Care and support of HIV exposed and HIV infected infants and children* 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

In order for PMTCT counsellors to carry out HIV testing correctly and professionally, a sound quality assurance program should be in place. Quality checks should be part of any test procedure to ensure that counsellors' results are always reliable. As a rule, a counsellor 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 adequate confidence that requirements for quality are met. Establishing standard procedures for specimen collection, storage, transportation, testing, recording, defining criteria for acceptable specimens or specimen rejection and conducting client exit interviews (e.g., customer satisfaction) are a few examples of quality assurance activities.

Tips for maintaining quality in HIV testing

- Perform testing according to the manufacturer's instructions as detailed in the test protocol included in the kit.
- Do not use test kit content beyond expiry date.
- Record test results immediately after testing.

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

- Testing should be conducted according to the manufacturer's instructions as detailed in the included test protocol.
- Test kit content should not be used beyond expiry date.
- Test results should be recorded immediately after testing.
- Laboratory technicians at healthcare facilities offering PMTCT services have supervisory roles in all matters relating to HIV testing at ANC clinics. They should monitor the performance of HIV testing at the facility and conduct quality assurance exercises locally per *National HIV Quality Assurance Guidelines* (e.g., retesting every tenth specimen and all indeterminate specimens in the laboratory and conducting proficiency testing). Results of all of these tests should be documented.
- 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 change of staff when necessary.

Quality assurance measures at laboratory: HIV DNA-PCR assays

- DBS specimens collection must be collected, stored, transported according to stipulated standard operating procedures.
- Testing should be conducted according to the manufacturer's instructions as detailed in the included test protocol.
- Test kit content should not be used beyond expiry date.
- Testing should be done according to national testing algorithm.
- Test results should be recorded immediately after testing.
- Testing must be done by trained laboratory technicians 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. S/he 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., retesting 15% to 18% of previously tested specimens and all indeterminate specimens in the laboratory and conducting proficiency testing). Results of all of these 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 change of staff when necessary.

General procedure for HIV testing

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

- 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
- Practice 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 during ANC

ANC 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 their clients.

ANC for women infected 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.

Practice Point

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

5.2 Essential ANC for women with HIV infection

Women living with HIV should receive comprehensive ANC services, which are summarised in Table 5.1.

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. ▪ Determine drug history, current medications, known allergies, and use of traditional medicines such as herbal products. Ask about alcohol or drug use or abuse. ▪ Explore psychosocial history and current psychosocial issues. ▪ Ask about current symptoms.
Physical examination	▪ Measure vital signs and conduct 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 testing

	▪ 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 ▪ Clinical staging should be conducted at every visit. Note that women who are not eligible for ART early in pregnancy may become eligible for treatment later in pregnancy or during the postpartum period. When this occurs, ART should be initiated.
ART or ARV prophylaxis	▪ Provide ART to eligible women. If ART is not available at the facility, refer to CTC but continue to follow the woman at ANC during pregnancy and the postpartum period. ▪ Provide ARV prophylaxis for women who are not eligible for ART.
Screening, prevention and treatment of TB	Tuberculosis is a leading cause of death among people living with HIV: ▪ At every visit, screen pregnant women living with HIV for signs and symptoms of TB disease. Screen all women for TB disease who present to ANC with a cough lasting more than 2–3 weeks. ▪ Treatment of TB should follow national guidelines. Note that treatment for TB can complicate treatment for HIV and impact decision-making about ARV choices. HIV/TB co- treatment should be managed at CTC.
Opportunistic infection (OI) prophylaxis	▪ Prescribe CPT for all pregnant women who are living with HIV, regardless of WHO clinical stage or CD4 cell count. CPT should be used throughout pregnancy. After delivery, adult criteria should be used (see guidelines for management of HIV). ▪ Women on CPT do not need sulfadoxine-pyrimethamine prophylaxis for malaria.
Screening, prevention and treatment for malaria	▪ Ensure adherence to CPT. CPT can prevent and treat malaria. ▪ Identify acute cases of malaria; treat promptly according to national guidelines. ▪ Recommend indoor residual spraying (application of a long-acting insecticide on the inside walls and roof of the home and domestic animal shelters). ▪ Recommend the use of insecticide-treated bed nets.
Gynaecological examination	▪ Include sterile speculum exams when indicated, following standard national guidelines.
STI prevention and treatment	▪ Assess risk for STIs. ▪ Provide counselling and education about preventing STIs. Explain the risk of HIV re-infection from unprotected sex with an infected partner. Always recommend condom use during pregnancy and lactation. ▪ Teach signs and symptoms of STIs. ▪ Diagnose and treat STIs early, according to national guidelines.

Assess and support adherence	▪ Provide counselling and education on healthy pregnancy, HIV care and treatment and PMTCT. ▪ Ensure accurate knowledge of ART or prophylaxis (schedule, dosing etc.). ▪ Ensure knowledge and understanding of the rationale for ART or prophylaxis and the risks of non-adherence.
Nutritional assessment and counselling	Conduct nutritional assessment and provide nutritional counselling: ▪ Assess and treat anaemia, especially in women who will receive AZT as part of their treatment or prophylaxis regimen because AZT can cause or exacerbate anaemia. Anaemia can occur at baseline or after initiation of AZT. Despite this, every effort should be made to use AZT during pregnancy because of its demonstrated effectiveness in PMTCT. ▪ Give iron, foliate, and multivitamin supplements according to national guidelines. ▪ Confirm that she is getting enough nutritious food and recommend realistic diet changes when needed, based on local resources.
Counselling on 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. ▪ Infant prophylaxis is most effective when initiated as soon as possible after delivery. Infants who have not received ARV prophylaxis soon after birth are at higher risk of HIV infection.
Tetanus toxoid immunisations	▪ Administer immunisation according to national guidelines.
Counselling on infant feeding	▪ Provide counselling and support for infant-feeding counselling. Counsel and support the mother to breastfeed exclusively for the first 6 months of her infant's life, followed by the introduction of complementary feeding with continued breastfeeding until 12 months of age. ▪ Once the infant reaches 12 months, encourage weaning over the course of about 1 month. ▪ Women who are uninfected should be encouraged to breastfeed to 24 months or more (with the introduction of nutritious, complementary foods from 6 months of age), as should women whose infants have been diagnosed with HIV. (See Module 6, Infant Feeding in the Context of HIV Infection).
Counselling related to care of the HIV-exposed infant: ▪ HIV prophylaxis for PMTCT ▪ HIV testing ▪ CPT	▪ Educate women and their partners about infant ARV prophylaxis. All HIV-exposed infants should receive ARV prophylaxis, beginning as soon as possible after birth. This is an important component of PMTCT. ▪ The type and duration of infant ARV prophylaxis depends on whether the mother is on ART or not and if the mother is breastfeeding. This should be discussed with the mother before the infant is born. ▪ Inform women and their partners about infant HIV testing and emphasize the importance of early diagnostic testing. All HIV-exposed infants should be tested for HIV infection at the age of 4–6 weeks and re-tested 6 weeks after cessation of breastfeeding. ▪ 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).
Counselling on pregnancy **Safe Motherhood**	▪ Provide women with information and instructions on seeking care early in their pregnancy. ▪ Instruct her to return to the clinic/hospital immediately if she experiences any of the following pregnancy complications: ▪ Bleeding ▪ Fever >38º C ▪ Pre-eclampsia (swelling of hands and feet, severe headaches and blurred vision) ▪ Severe pallor ▪ Abdominal pain
Counselling on HIV danger signs	▪ Provide women with 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 **Partners and family**	Psychological and social support is critical to a healthy pregnancy and a healthy family. ▪ Assess and address needs for psychological and social support. ▪ Refer women, partners and families 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	▪ Encourage couple involvement to empower decision making regarding family planning. ▪ 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).

HIV testing

Determining a woman's HIV status is the first step in providing PMTCT services, including ART or prophylaxis and other HIV-related care, treatment and support. Women should receive HIV testing and counselling at the first antenatal visit and if tested negative, should be retested during the third trimester. For infants who become infected with HIV, PMTCT services are a gateway to early diagnosis of HIV infection and enrolment in HIV care and treatment, if HIV-infected. Partner HIV testing and counselling should be encouraged, supported and recorded in the ANC register for male partner test.

In some situations, because of a lack of accessible testing services or because a woman refuses to be tested, her HIV status may remain unknown. Women with unknown HIV status should be considered at risk of MTCT. They should be made aware that testing is available

at later ANC visits and reminded of the benefits of knowing their HIV status. *They should **not** be given ARV prophylaxis until they have been tested and confirmed positive.*

Prevention and treatment of OIs and other infections during ANC

Preventing and treating OIs and other infections can reduce rates of illness and death among pregnant women who are living with HIV. It also can reduce the risk of adverse pregnancy outcomes, such as preterm birth, and the risk of other conditions that increase MTCT, such as STIs.

- Women should be assessed for signs and symptoms of infection and receive prompt treatment according to national protocols. These infections may include:
- All STIs, including syphilis
- Urinary tract and respiratory infections
- Vaginal candidiasis
- Tuberculosis
- Pregnant women should receive prophylaxis against common infections or illnesses during pregnancy, including:
- Ferrous sulphate, folic acid and multivitamin supplementation
- Tetanus toxoid immunisation
- CPT should be provided to all pregnant women living with HIV regardless of WHO clinical stage or CD4 count.

CPT should be used throughout pregnancy. After delivery all asymptomatic HIV-infected women with CD4 counts of <350 cells/ml should receive CPT. For more information, refer to the national guidelines for management of HIV and AIDS.

CPT dosing
960mg once daily (either as 1 double-strength tablet or two single-strength tablets of 480mg).

Evaluation for ART eligibility

If a woman tests positive for HIV, she should be evaluated for eligibility to start ART during her pregnancy. In addition to clinical staging, conduct the following laboratory tests:

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

Evaluation for ART eligibility should be conducted at ANC facilities or at CTCs. See Section 5.3 of this chapter for ARV eligibility criteria.

Nutritional assessment, counselling and support

All women need advice on a healthy diet, but pregnant women living with HIV require special assessment for nutritional problems and should receive nutritional counselling throughout the antenatal period.

- Nutritional status and weight should be monitored and recorded at each ANC visit. Inadequate weight gain or weight loss can be a sign of advancing HIV disease or opportunistic infection.
- Education and nutritional counselling should be an integral part of each visit.
- HCWs should discuss specific dietary choices that make up a healthy diet for the mother and her infant.
- Nutritional supplements, ferrous sulphate, folic acid and multivitamins should also be given according to national guidelines.

See chapter 7 for more details.

ANC counselling tips:

- Use effective communication and counselling techniques to develop a trusting relationship.
- Assess women's understanding of the information they receive about HIV.
- Assist women in revealing their questions and concerns.
- Reinforce information from previous education and counselling sessions.
- Provide tailored support for attending all ANC, postpartum and follow-up care and treatment appointments.

Refer to Chapter 4 for more information.

Psychosocial and community support

The HCW should assess a pregnant woman's family and social support networks and refer those in need to AIDS support organisations, faith-based organisations and clubs.

Additional education, counselling and support needs for the pregnant woman living with HIV

Pregnant women living with HIV and their partners have additional education, counselling and support needs that should be assessed and met during ANC. An HIV-infected pregnant woman's need for counselling and support is on-going, and will continue into the postpartum period and beyond.

Pregnant women living with HIV require specific counselling and education on the following topics:

- Safer infant feeding options and support for infant feeding
- The benefits of disclosure to partners, family and friends
- Education on potential side effects of ART and prophylaxis and their management
- Education and support for adherence to treatment and prophylaxis
- Safer sex during pregnancy, including the use of condoms
- ARV prophylaxis for the infant
- HIV testing schedule, treatment and care services for the infant
- The importance for both mother and child of keeping all ANC, postpartum and on-going comprehensive care appointments.

Healthcare workers caring for women living with HIV should pay special attention to signs and symptoms of common OIs, such as PCP and TB, and follow national guidelines for screening, prevention and treatment. Opportunistic infections in pregnant women usually indicate HIV disease progression and require referral to a CTC.

5.3 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 prophylaxis or protection for the infant during and after exposure to HIV, including during breastfeeding. ARV medications are effective for both treating HIV infection in the pregnant woman and reducing MTCT. They do not cure HIV in a person who is already HIV infected.

ART: Long-term 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: Short-term use of ARV medications to *reduce HIV transmission* from mother to infant.

ART during pregnancy

Pregnant women who are HIV infected and eligible for ART for their own health should be offered combination ART in accordance with national guidelines.

Women who are diagnosed with HIV during pregnancy and are eligible for ART should start treatment as soon as possible. A women's eligibility for ART can be determined by clinical staging or CD4 cell count. If a woman is on ART during her pregnancy, the regular dosing schedule should continue throughout labour and delivery, as well as the postpartum period. However, she may need to change the medications in the ARV regimen to avoid potential birth defects. For example, efavirenz (EFV) can cause birth defects and therefore it should not be used for pregnant women during the first trimester.

Maternal ART should be coupled with the once daily administration of NVP to infants from birth or as soon as possible thereafter until 6 weeks of age, regardless of infant feeding choice.

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

Eligibility criteria for ART

For pregnant women living with HIV, the initiation of ART for their own health is recommended for all women who have CD4 cell counts of ≤350 cells/mm3, irrespective of WHO clinical staging, and for all women in WHO clinical stage 3 or 4, irrespective of the CD4 cell count.

ART regimens for eligible pregnant women

The first-line ART regimen for pregnant women should be based on their CD4 count, clinical WHO stage as well as their gestation age.

All pregnant women with CD4 cell counts ≤ 350/mm3 regardless of their clinical stage, should be initiated on ART.

All women with WHO clinical stage 3 or 4, regardless of their CD4 count should be initiated on ART

The first line ART regimens are:

1. AZT + 3TC+ EFV
2. AZT +3TC + NVP

Note: Avoid the use of EFV in the first trimester and use NVP based regimen instead.

NVP requires a dosage increase after initiation. The initial dosage of NVP is 200 mg per day for the first 14 days, then 200 mg BD. Gradually increasing the dosage decreases the frequency of rash. Care should then be taken when escalating the dose, signs of hepatoxicity such as a skin rash due to NVP should be monitored.

Practice Point

ART is recommended for HIV-infected women in the following situations:

- WHO clinical stage 3 OR 4, OR
- CD4 cell count less than or equal to 350 cells/mm^3

ART can start at any point during pregnancy. Pregnant women living with HIV in need of ART for their own health should start ART as soon as possible regardless of gestational age and continue throughout pregnancy, childbirth, breastfeeding and thereafter. Infants born to women on ART should receive ARV prophylaxis according to national guidelines from birth to 6 weeks of age.

Table 5.2: Maternal ART and infant ARV prophylaxis for women eligible for treatment

Mother
▪ Maternal antepartum daily ARV therapy, starting as soon as possible regardless of gestational age, and continued during pregnancy, delivery and thereafter. ▪ AZT 300 + 3TC BD + NVP 200[a], **or** ▪ AZT + 3TC + EFV[b], **or** ▪ TDF + 3TC (or FTC) + NVP **or** ▪ TDF + 3TC (or FTC) + EFV[b] a. NVP requires a dosage increase after initiation. Initial dose of NVP is 200 mg per day for the first 14 days, then 200 mg BD. b. Avoid use of EFV in the first trimester and use NVP instead
Infant
Daily NVP from birth until 6 weeks of age (regardless of the mode of infant feeding).

See Table 5.5 for infant NVP dosing.

Special considerations

- AZT has been shown to cause anaemia in some people. Severe anaemia should be ruled out before starting the first-line regimen of AZT + 3TC + NVP. Women who have clinically significant or severe anaemia (haemoglobin of <7.5 g/dL) should first be evaluated for the cause and treatment of anaemia. Should it be necessary, replace AZT by TDF. Clinically

monitor signs of anaemia at every visit while doing a HB test at two months after initiation and the monthly thereafter.

- Care should be taken when initiating eligible pregnant women at gestation age of <14 weeks on NVP contacting regimen due to the likelihood of NVP toxicity
- For women who are co-infected with TB, additional drug treatment and clinical management are required to minimise drug-drug interactions that may occur when ARV medications are co-administered with TB treatment.

Preventing NVP resistance when giving ARV prophylaxis

The long half-life of NVP, meaning the time required for drug potency to be reduced by half or eliminated from the body, is one of the reasons it is so effective. However, the medication's long half-life also makes it easier for HIV to become resistant to the drug. When NVP is used alone as a single-dose, resistance may develop. This risk is reduced when the mother is initiated for 7 days on AZT + 3TC twice daily from the time sd-NVP is initiated. The first dose of AZT + 3TC is typically given at the same time as the sd-NVP.

To prevent NVP resistance, HCWs should avoid repeat dosing of sd-NVP to the mother unless it is necessary.

- NVP administration should be clearly documented on medical records to avoid accidental repeat administration.
- Ensure the mother is in true labour before administering sd-NVP; whether she was in true or false labour, the sd-NVP should not be repeated (but ideal timing is during true labour).
- If the mother vomits within 30 minutes of taking the medication, the NVP dose should be repeated.
- If the mother vomits more than 30 minutes after taking sd-NVP, no additional NVP dose is needed.
- Combining NVP with other ARV medications reduces risk of resistance. This is reflected in the national ARV prophylaxis recommendations.

Practice Point

To prevent NVP resistance, HCWs should:

- Document NVP administration clearly on medical records to avoid accidental repeat administration
- Avoid repeating the maternal NVP dose if given during false labour at any point in time.
- Repeat the dose of NVP ONLY if vomiting occurs within 30 minutes of NVP administration. No additional dose is required if the vomiting occurs after 30 minutes

Adverse events

PMTCT HCWs whose clients are receiving an ART regimen containing NVP must evaluate their clients for the following side effects and potential adverse events:

- **Rash:** Rash is a common side effect of NVP that usually occurs in the first 6 weeks of treatment. All rashes require evaluation to rule out a potentially dangerous adverse reaction known as Stevens-Johnson syndrome. If a patient shows signs and symptoms of severe rash, the patient should be referred immediately to the CTC for further evaluation.
- **Hepatotoxicity:** Hepatotoxicity is an important adverse event related to NVP that can be life-threatening. It is more common in treatment-naive women with CD4 counts greater than 250 cells/mm3. Healthcare workers should assess for and teach their clients about the signs and symptoms of hepatotoxicity, especially jaundice, nausea and fatigue. In case of NVP hepatotoxicity, efavirenz (EFV) 600mg once daily can be used in place of NVP. EFV should be initiated in the second or third trimester as it may cause birth defects if taken in the first trimester.

Practice Point

If a patient shows signs of hepatotoxicity or has a severe rash with bleeding or peeling of the mucosa, the patient should be referred immediately to the CTC for further evaluation.

ART and ARV prophylaxis

- Women who are receiving effective ART should not be given ARV prophylaxis.
- All infants born to women living with HIV should receive ARV prophylaxis, including infants of mothers receiving ART

5.4 ARV prophylaxis for PMTCT

ARV prophylaxis for infants born to women receiving ART

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, and full viral suppression has 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, regardless of the mode of infant feeding.

ARV prophylaxis for women with HIV infection who are not eligible for ART for their own health

ARV prophylaxis should be provided to all women living with HIV who are not yet eligible for ART for their own health. They should be strongly encouraged to deliver at a healthcare facility where they and their children can benefit from safer delivery practices and have access to HCWs who are knowledgeable about interventions that reduce the risk of transmission.

Women not eligible for ART should be started on:

- AZT 300 mg twice a day from as early as 14 weeks of gestation.

Women on ARV prophylaxis for 4 weeks or more at the time of labour:

- AZT (300mg) every 12 hours during labour and delivery. Their ARV prophylaxis regimen ends when delivery is complete.

Women who received less than 4 weeks of AZT should also be given:

- Single dose (sd) NVP (200mg) and AZT + 3TC at onset of labour. NVP is given as a single dose, but AZT + 3TC is given twice a day for 7 days. AZT + 3TC are administered after delivery to reduce risk of NVP resistance. If sd-NVP is not administered, AZT + 3TC are not necessary.

Prophylaxis for infants born to women who did not receive ARV prophylaxis or ART

All HIV-exposed infants should receive prophylaxis at birth or at their first encounter with a health facility (for those who turn up late and are breastfeeding). An infant born to an HIV-infected woman who did not receive any ARVs should receive the same regimen as indicated for infants of women who received ARV prophylaxis:

- For breastfeeding infants, administer daily NVP to the infant from birth until 1 week after all exposure to breast milk has ended.
- For infants receiving only replacement feeding, daily administration of NVP from birth until 6 weeks of age is recommended.

See Table 5.3 for a summary of the recommendations.

Table 5.3: Recommended ARV prophylaxis for women with HIV (not in need of treatment) and their infants

Woman on ARV prophylaxis for 4 weeks or longer at time of labour		
Antepartum	**Intrapartum**	**Postpartum**
Received AZT 300 mg twice a day from as early as 14 weeks of gestation	AZT (300 mg) 12hrly from start of labour*	None — ARV prophylaxis is completed at delivery
Woman on ARV prophylaxis for less than 4 weeks at time of labour		
Antepartum	**Intrapartum**	**Postpartum**
Received AZT 300 mg twice a day for less than 4 weeks	sd-NVP (200 mg), **and**	
AZT (300 mg) + 3TC (150 mg) 12hrly from start of labour*	Continue AZT (300 mg) + 3TC (150 mg) for 7 days after administration of sd-NVP	
Infant ARV prophylaxis regimen*		
Feeding method	**Regimen**	
Breastfed infant	NVP from birth until 1 week after all exposure to breast milk has ended, or for 6 weeks if breastfeeding ceases before 6 weeks	
Exclusively replacement fed infant	NVP from birth until 6 weeks of age	

*Infant ARV prophylaxis regimen is the same, regardless of duration of maternal ARV prophylaxis. This is also the same regimen for infants of mothers living with HIV who had no ARVs during pregnancy.

Table 5.4: Properties of ARV medications used for PMTCT

Nevirapine (NVP)	▪ Class of ARV medications known as nonnucleoside reverse transcriptase inhibitors (NNRTIs) ▪ NNRTIs stop HIV from reproducing ▪ 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 ▪ Side effects and adverse events, including severe rash and hepatotoxicity, sometimes occur when used for ART. ▪ Can cause hepatotoxicity in women with higher CD4 counts or in those for whom no CD4 count is available (This does not apply to the use of a single dose of NVP for PMTCT). ▪ Can cause viral resistance even after 1 dose. Combining sdNVP with AZT + 3TC during labour and for 7 days postpartum reduces the risk of developing viral resistance.
Zidovudine (ZDV, AZT)	▪ Class of ARV medications known as 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 ▪ Mild anaemia may occur but usually resolves when the medication is stopped and is less likely to occur when used short-term as prophylaxis for PMTCT ▪ Should not be initiated in women with severe anaemia (haemoglobin ≤7.5 g/dL)
Lamivudine (3TC)	▪ Class of ARV medications known as nucleoside reverse transcriptase inhibitors (NRTIs) ▪ Absorbed quickly after taken by mouth ▪ May be taken with or without food ▪ Generally well tolerated ▪ Major side effects can include headache and nausea

Practice Point

Pregnant women testing HIV positive during ANC who are not eligible for ART:

- **During ANC:** Start AZT 300 mg BD from 14 weeks of gestation or anytime thereafter.
- **During labour: Women on ARV prophylaxis for 4 weeks or more:** AZT (300mg) every 12 hours during labour and delivery. For women who took 4 weeks or more of AZT, their ARV prophylaxis regimen ends when delivery is complete.
- **Women who received less than 4 weeks at the time of labour:** Single dose (sd) NVP (200mg) and AZT (300mg) + 3TC (150mg) at onset of labour. NVP is given as a single dose, but AZT + 3TC is given twice a day for 7 days. Sd-NVP is no longer recommended for use in labour unless the woman received a sub-optimal course of AZT. AZT + 3TC is administered after delivery to reduce risk of NVP resistance. If sd-NVP is not administered, AZT + 3TC is not necessary.
- **Infant (if breastfeeding):** Receive NVP as soon as possible after delivery and continue until one week after complete cessation of breastfeeding or, if breastfeeding stops before 6 weeks, for a minimum of 6 weeks following birth
- **Infant (not breastfeeding):** Daily NVP from birth until 6 weeks of age Infants who are born outside healthfacilities and are breastfeeding should be initiated on NVP as as they they present at a health facility.

Pregnant women who test HIV positive during labour:

- Single dose NVP(200mg) and AZT (300mg) + 3TC (150mg) at onset of labour. NVP is given as a single dose but AZT +3TC are given twice daily for 7 days. AZT +3TC are administered after delivery to reduce the risk of NVP resistance. If sd-NVP is not administered, AZT + 3TC is not necessary.
- **During the postpartum period:** Continue AZT 300 mg BD and 3TC 150 mg BD for 7 days
- **Infant (if breastfeeding):** Receive NVP as soon as possible after delivery and continue until one week after complete cessation of breastfeeding
- **Infant (not breastfeeding):** Daily NVP from birth until 6 weeks of age

Mothers who test HIV positive after delivery

- **Infant (if breastfeeding):** Daily NVP from birth until 1 week after all exposure to breast milk has ended or, if breastfeeding stops before 6 weeks, for a minimum of 4 to 6 weeks following birth.
- **Infant (not breastfeeding):** Once daily NVP from birth until 6 weeks of age

A clinical assessment and CD4 count should be done postpartum. Women who are found to require ARV therapy for their own health should be started on an appropriate life-long ART regimen. Because of the time lag to reduction in maternal viral load, the infant should continue daily NVP until the mother has received at least 6 weeks of ART before discontinuing infant prophylaxis.

Practice Point

- Women living with HIV should be encouraged to continue with their twice ARV Prophylaxis or ART treatment throughout pregnancy and labour and delivery.
- Women who deliver outside a health facility, should be encouraged to bring their infants for ARV prophylaxis as early as possible after delivery.

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 (Table 5.5).

Table 5.5: Infant NVP dosing[a]

Infant NVP dosing recommendations	
Infant age	**NVP daily dosing**
Birth[b] to 6 weeks ▪ Birth weight 2000–2499 g ▪ Birth weight ≥2500 g	 1ml (10 mg) once daily 1.5ml (15 mg) once daily
> 6 weeks to 6 months	2.0ml (20 mg) once daily
> 6 months to 9 months	3.0ml (30 mg) once daily
> 9 months to one week after all exposure to breast milk has stopped	4.0ml (40 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.

Source: World Health Organisation: ARV drugs for treating pregnant women and preventing HIV in infants, 2010.

Prescribing ARV medications for treatment or prophylaxis

ARV medications can be prescribed by medical officers, assistant medical officers and clinical officers at ANC and labour and delivery facilities. If a mother presents at an ANC facility for a refill, an ANC nurse can renew an existing prescription written by a doctor and dispense the medication.

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

5.5 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 or women who haven't retested after three months, if initial test was negative
- Administration of ART or ARV prophylaxis according to national guidelines
- Implementation of safer obstetric practices

Determine women's HIV status

A woman may present to a healthcare facility in labour without knowing her HIV status. In these circumstances, HCWs should try to determine the woman's status as soon as possible so she can receive appropriate care.

Women of unknown HIV status should receive routine pre-test education and rapid HIV testing so that ARV prophylaxis or treatment can be administered before delivery. HIV counselling, testing and administration of ARV prophylaxis are guided by the stage of labour in which the woman presents. See section 4.10 of Chapter 4, Testing and Counselling for Women of Unknown HIV Status, for guidance on HIV testing and counselling during labour and delivery.

Modify labour and delivery care

Labour management should follow obstetrical best practices and all HCWs must use Standard Precautions during labour and delivery. However, many routine obstetrical practices during labour and delivery can increase MTCT. Healthcare workers should follow safer obstetric practices to reduce MTCT, which are outlined in Table 5.7.

Table 5.7 Safer obstetrical practices to reduce MTCT

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 measure the progress of labour, and record all medications used during labour, including ARV prophylaxis.

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 companions of their choice present during labour, preferably companions who know about their HIV status.

5.6 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 care that will reduce the risk of MTCT. Despite efforts to encourage women to give birth in a healthcare facility, many will deliver outside health institutions under the assistance of a home birth attendant. In the interest of women who choose to give birth at home, pregnant women and home birth attendants can 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 and risk factors for transmission
- Their own risk of infection and how to protect themselves
- Basic skills to deliver PMTCT interventions, including safer delivery practices
- Standard Precautions

All infants delivered at home should be brought to the HF as soon as possible after delivery for the infant dose of PMTCT regimens.

Considerations regarding mode of delivery

Caesarean section performed before the onset of labour or membrane rupture has been associated with reduced MTCT. However, in Tanzania, the capacity to perform caesarean sections to reduce MTCT is low; therefore this operation is not regularly performed.

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 are more likely to spontaneously abort or miscarry if they are not well cared for in ANC. In some cases, the HIV status of the woman will not be known. For women who have a spontaneous abortion, HCWs should:

- Provide HIV testing and counselling, if not tested or re-tested during the third trimester of pregnancy (see Module 4, HIV Testing and counselling, Unit 4 for more information on HIV testing in the labour and delivery setting)
- Assess for the signs and symptoms of HIV infection
- Consider using antibiotics after uterine evacuation — if performed — if the woman is living with HIV
- Conduct family planning counselling

5.7 Immediate post-delivery care of HIV-exposed infants

The immediate care of the newborn exposed to HIV follows Standard Precautions. Regardless of the mother's HIV status, all infants should be kept warm after birth, dried and handled with gloved hands until maternal blood and secretions have been washed off. In caring for newborns, HCWs should observe Standard Precautions.

All infants delivered at home should be brought to the HF as soon as possible after delivery for the infant dose of PMTCT regimens.

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.
- Administer Tetracycline eye ointment
- Breastfed infants will receive vitamin A 100,000 IUs starting at 9 months. 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.

5.8 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 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 receive basic training on their 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 prophylaxis for mother and infant: All mothers living with HIV need to be informed of the importance of adherence and the correct way to take their ARV prophylaxis and 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 must be provided with counselling about the importance of 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, Section 7.2: *Post-Partum Care and Support*

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
- 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 tenderness
- Dual protection for family planning and HIV infection prevention. Women should have access to the chosen method within 6 weeks after delivery to avoid unintended pregnancy or the risk of new infection

Education about and scheduling of comprehensive care visits for the mother and infant

Mothers with HIV and their families will need additional ongoing 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

- 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 ARV prophylaxis for their infants. They should receive information about the importance of adhering to infants ARV prophylaxis
- Women should receive information about the importance of infant HIV testing and CPT
- 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 referred during their 42-day visit to HIV care and treatment for follow-up at the 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

There is a possibility of transmission of HIV to infants of an HIV-infected mother through breast milk. Therefore emphasis should be on infant feeding practices that support the greatest likelihood of HIV-free survival of their children and not harm the health of mothers known to be HIV-infected. The most appropriate infant feeding option for an HIV-infected mother depends on her individual circumstances, including her health status and the local situation. The option should take greater consideration of the health services available, the counselling and support she is likely to receive. To achieve this, prioritization of prevention of HIV transmission needs to be balanced with meeting the nutritional requirements and protection of infants 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 infant *ONLY* breastmilk and no other liquids or solids, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines prescribed by a healthcare worker.

Replacement feeding (RF): Feeding infant something *OTHER THAN* breastmilk. During the first 6 months of life, the only replacement feed that meets an infant's nutritional requirements is commercial infant formula.

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

Complementary foods: Any food, whether manufactured or locally prepared, that is added to a child's diet when the child reaches 6 months of age. Complementary foods are needed because breastmilk or replacement foods alone do not satisfy the child's nutritional requirements after this age.

- Without intervention, 5% to 20% of infants 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). Despite these risks exclusive breastfeeding is beneficial to the exposed infants and can be made safer through the use of proper breastfeeding techniques and the use of ARV prophylaxis during the period of breastfeeding (see chapter 5 for more details on feeding and refer to the National Guideline on infant and young child feeding (IYCF).

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 (see Appendix 6-A).

6.2 Risks associated with mixed feeding before 6 months of age

In the first 6 months of life, HIV-exposed infants who are fed mixed foods (i.e., breast milk with other liquids and food) 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 into the gut. In addition mixed fed infants also have increased risk of diarrhoeal illnesses and of malnutrition. 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

HCWs 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 also prevent MTCT. Safer infant feeding counselling should include information that assists women and their families in making informed decisions about 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 exclusive breastfeeding and be encouraged to breastfeed exclusively for the first six months of life. Breastfeeding has definite benefits for the infant, mother, and community.
- Women who are not infected with HIV or who do not know their status will also require counselling on safer sex practices and the risks of becoming infected with HIV later in pregnancy or during breastfeeding. Women with unknown HIV status should be encouraged to be tested for HIV.
- Women who are exposed to HIV during pregnancy or while breastfeeding should be encouraged to retest 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 to continue giving the child breast milk until s/he is at least 2 years old. After the infant reaches 6 months of age, nutritious complementary foods should be introduced.

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. Women who are eligible should receive lifelong ART. Maternal ART reduces the risk of HIV transmission during pregnancy, labour, delivery and during the breastfeeding period.

Women living with HIV should breastfeed exclusively for the first six months of life and then introduce complementary foods while continuing to breastfeed to 12 months of age (child should be receiving ARV prophylaxis). 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 a nutritionally adequate and safe diet without breast milk can be provided.
- 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 and beyond.

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 until at least one year of age prevents many of the complexities associated with early cessation and the challenge of providing a safe and adequate diet without breast milk. Nonetheless, if a mother wants to stop breastfeeding, she should be supported to do so if it is acceptable, feasible, affordable, sustainable and safe (AFASS) for her and her infant. If not, she should be advised and supported to continue breastfeeding with the introduction of complementary foods from six months of age. Information about transitioning from breast milk to replacement feeding is summarised in Section 6.7.

Mothers wishing to reduce the risk of transmitting HIV to their infants may choose to replacement feed their infants exclusively for the first 6 months of life. However, exclusive

Definitions

AFASS: An acronym that stands for acceptable, feasible, affordable, sustainable and safe.

This means that the following 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 sufficient infant formula milk 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 milk; **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.

Safe: Replacement foods are correctly and hygienically stored, prepared and fed in nutritionally adequate quantities; infants are fed with clean hands using clean utensils, preferably by cups.

replacement feeding is recommended only when it is AFASS. Replacement feeding is addressed in Section 6.6.

Recommendations for safer infant feeding according to HIV status are summarised in Table 6.1. For additional information on the advantages and disadvantages of each option, see Appendix 6-B: *Advantages and Disadvantages of Infant Feeding Options for Mothers Living with HIV*.

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[a]	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 (with prophylaxis) to 12 months of age. At 12 months: ▪ If the child is either HIV-uninfected or of unknown HIV status — breastfeeding should stop gradually if a nutritionally adequate and safe diet without breast milk can be provided. ▪ If the child is known to be HIV-infected — continue breastfeeding till 2 years of age and beyond[b]
Woman of unknown HIV status	Exclusive breastfeeding	▪ Breastfeeding and complementary foods until 2 years and beyond ▪ Encourage this group of women to test for HIV
HIV-infected woman for whom replacement feeding is AFASS	Replacement feeding	Replacement feeding and complementary foods until 2 years and beyond
Mixed feeding during the first 6 months of life is never recommended and should be avoided by all women, regardless of HIV status.		

a. Exclusive breastfeeding means that there are no added foods or liquids, not even water. Vitamin or mineral supplements should be provided only when medically appropriate.

b. If replacement feeding meets the AFASS standard, then an HIV-infected woman may stop breastfeeding after 6 months to reduce HIV exposure to the infant.

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 and how to reduce risks. Discuss how HIV is transmitted and the continued risk of transmitting HIV to the infants as long as the infant continues to breastfeed.
- **Step 2:** Ensure mother is in HIV-related care. Discuss ART if she is eligible; if not, explain the use of ARVs for PMTCT during the breastfeeding period. Explain that ARVs significantly improve child survival by reducing risk of HIV transmission not only during pregnancy, labour and delivery, but also during breastfeeding.
- **Step 3:** Discuss exclusive breastfeeding. Summarise the advantages and benefits of breastfeeding, discuss the continued risk of transmitting HIV to the infant breastfed for prolonged periods. (See Appendix 6-B).
- **Step 4:** Encourage and support mother to adhere to the ARV prophylaxis regime while breastfeeding
- **Step 5:** Demonstrate how to breastfeed or observe a breastfeed.
- **Step 6:** If the mother wants to replacement feed, conduct an AFASS assessment. Only if all AFASS criteria for replacement feeding are fulfilled for her and her infant, provide her with the opportunity to practice hygienic and correct preparation of replacement feeds and cup feeding. Otherwise recommend to exclusive breastfeed the child for the first 6 months. See Section 6.6.
- **Step 7:** Provide follow-up counselling and support.

HCWs should also discuss heat treated expressed breast milk (see Appendix 6-C). Mothers living with HIV may consider expressing and heat-treating breast milk as a short term feeding strategy in special circumstances such as:

- When the infant is born with low birth weight or is otherwise ill in the neonatal period and unable to breastfeed;
- When the mother is unwell and temporarily unable to breastfeed or has a temporary breast health problem such as mastitis;
- To assist mothers to stop breastfeeding;
- If antiretroviral medication is temporarily not available

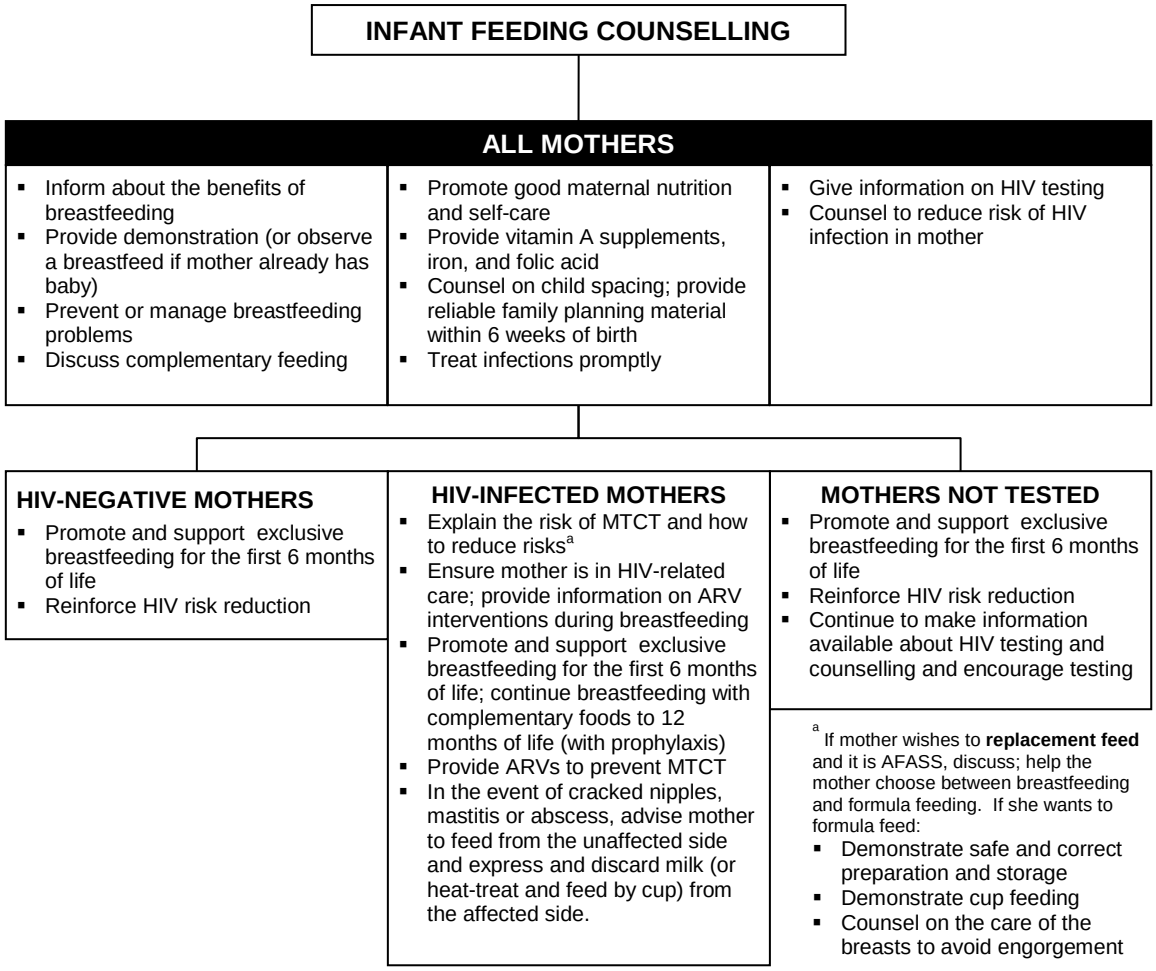
At each step, women should be encouraged to involve their partners or other family members (such as mother or sister) in infant-feeding decisions, when safe and appropriate. Refer mothers to trained infant-feeding counsellors for continued support during the first two years of a child's growth and development. Guidelines for promoting safer infant feeding are summarised in Figure 6.1.

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 after delivery, with continuing counselling occurring within 1 week of delivery and during RCH and Under-Five clinic visits.

The counselling process should be repeated if the mother changes her original infant feeding choice. Healthcare workers should encourage the inclusion of the client's partner or family member at each stage of counselling.

Figure 6.1: Guidelines for promoting safer infant feeding



Infant feeding counselling in postpartum settings

When infant feeding counselling takes place during the postpartum period, the focus will likely be on steps 3 - 7 of the counselling process. In addition, infant feeding counselling at this stage should include an assessment of the child. During these visits, HCWs should monitor infant growth, look for signs of illness in the mother and infant, check to see that the infant is receiving enough milk and assess feeding practices to determine whether any change is desirable. In addition, the HCW should check the status of ARV prophylaxis for the infant and/or ART for the mother.

Mothers may assume that an infant is being fed adequately when he or she gains weight, urinates 6 to 8 times in a 24-hour period and has at least 2 to 5 bowel movements in a 24-hour period (note that there is substantial variability in infants' bowel movements). Additional counselling about feeding is needed when a child is sick or a mother returns to work or changes her feeding methods.

It is important that HCWs begin discussing feeding for infants 6 to 24 months of age during early postpartum visits so that mothers have adequate time to plan the transition to complementary foods. Healthcare workers should work with mothers who chose to stop breastfeeding after 6 months to plan ways to wean safely. Guidelines for promoting safer infant feeding are summarised in Figure 6.1.

6.5 Infant ARV prophylaxis

To minimise the risk of MTCT through breast milk, all HIV-exposed infants should receive ARV prophylaxis, which in Tanzania is NVP. ARV prophylaxis for infants is determined by whether a mother received ARV prophylaxis, is on ART or by her chosen infant feeding method (Table 6.2). Daily NVP should be initiated as early as possible after delivery. If not initiated at delivery it should be started as soon as possible in RCH care. Daily NVP should be prescribed to the mother/caregiver during routine infant care in RCH.

Table 6.2: Infant ARV prophylaxis

Scenario	Feeding method	Infant ARV prophylaxis	Duration of infant ARV prophylaxis
Mother on ART	Breastfeeding	NVP once daily	Birth until six weeks of age
	Replacement feeding	NVP once daily	Birth until six weeks of age
Mother on ARV prophylaxis during pregnancy	Breastfeeding	NVP once daily	NVP continues until one week after complete cessation of all breastfeeding.* If breastfeeding is stopped early, the infant should still receive at least six weeks of prophylaxis
	Replacement feeding	NVP once daily	Birth to six weeks of age
Mother did not receive ARV prophylaxis or treatment	Breastfeeding	NVP once daily	Birth until one week after complete cessation of all breastfeeding*
Mother did not receive ARV prophylaxis or treatment	Replacement feeding	NVP, once daily	Birth to six weeks of age
Adjust NVP dose for weight at every Expanded Program on Immunization (EPI) clinic visit.			

See Chapter 5, *Specific Interventions to Prevent MTCT*, for more information on administering ARVs for infants.

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 (see Appendix 6-A).
- Exclusive breastfeeding requires feeding on demand.

- All mothers should receive education and support for successful breastfeeding during ANC, after delivery, and during postpartum 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, help promote exclusive breastfeeding, and decrease the risk of MTCT.
- 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.

At postnatal visits of mothers who are breastfeeding, HCWs should:

- Monitor infant growth
- Assess development
- Provide immunisations
- Ask how breastfeeding is going for the mother
- Check current feeding practices and decide if any change is desirable
- 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 mother and infant are taking all prescribed ARV medications
- Reinforce the importance of giving ARV prophylaxis to the infant
- Change dosing of ARV prophylaxis for HIV-exposed infants according to weight. This is particularly important if the infant is on an extended period of ARV prophylaxis to cover the breastfeeding period
- Ensure CPT is initiated 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

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 and heat-treat breast milk (Appendix 6-C)
- Provide her with support to cup feed (Section 6.9)
- 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 when to stop the infant ARV prophylaxis after cessation of breastfeeding
- Discuss post-weaning HIV testing
- Provide additional support (as needed) to cup feed (Section 6.9)

Practice Point

- During infant feeding counselling, breastfeeding mothers should receive instruction in good breastfeeding technique, including correct positioning and attachment.
- Mothers should know that exclusive breastfeeding requires feeding on demand.
- Mothers should be assessed for mastitis at each follow-up visit. Healthcare workers should also monitor HIV-infected women for other breast conditions such as thrush and herpes simplex virus (HSV), which can be passed from infant to mother.
- Mothers should be encouraged to adhere to ARV prophylaxis.

6.7 Replacement feeding options 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. These include commercial infant formula or home-modified animal milk with micronutrient supplements. However, 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 replacement (formula) milk until 6 months of age. The advantages and disadvantages of replacement feeds are listed in Appendix 6-B: *Advantages and Disadvantages of Infant Feeding Options for HIV-Infected Mothers*.

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 on commercial infant formula should neither breastfeed nor be given any other food, water or other types of liquids except for multivitamins or medicines when indicated.

Commercial infant formula

Breastfeeding is recommended for all women and their infants. However, a woman with HIV has the right to choose to formula feed.

- Commercial infant formula is based on modified cow's milk or soya beans and is the closest in nutrient composition to breast milk.
- Commercial formula does lack some of the essential fatty acids present in breast milk.
- Commercial formula is usually a powder that is reconstituted with water. It is usually adequately fortified with micronutrients including iron.
- 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). It is therefore very important that the appropriate formula is used according to the age of the child.
- 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. Infants who are fed home-modified animal milks must receive daily micronutrient supplements to help prevent anaemia and other forms of malnutrition. Home-modified animal milks 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 gruels and porridge
- Flavoured milk drinks and coconut milk

See Section 6.8 and Appendix 6-D for more information and for guidance on preparation of home-modified animal milk.

AFASS assessment

If the mother wishes to replacement feed, her choice should be supported. However, the HCW should assess if it is acceptable, feasible, affordable, sustainable and safe (AFASS) for the mother and her infant. Replacement feeding should not be recommended unless the mother meets all five of the AFASS conditions. The family that does not meet even one of the five AFASS conditions should NOT consider replacement feeding; instead they should breastfeed, as per national guidelines.

Conduct the AFASS assessment with women who wish to formula feed during the first ANC infant feeding counselling session and again if the mother would like to change her infant feeding choice/method from breastfeeding to replacement feeding postpartum. Should the mother not meet any one of the AFASS conditions, the AFASS assessment may be discontinued and the decision to breastfeed reinforced (there is no need to proceed through all of the questions) (see section 6.3).

If a 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.

At postnatal visits of mothers who are formula feeding, HCWs should do the following:

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 Sections 6.7 and 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

If the infant is approaching six months:

- Discuss complementary feeding with continued formula feeding to 12 months and then transitioning to animal milk until at least 24 months of age

It is recommended that formula fed infants are transitioned to animal milk any time after 12 months of age. If necessary (e.g., for financial reasons), a child may be transitioned from formula to animal milk any time after six months.

Practice Point

- Replacement feeding should not be recommended unless the mother meets all five of the AFASS conditions.
- Assess AFASS adherence in every visit
- Home-modified animal milk is NOT RECOMMENED as a replacement food in the first six months of life
- If a 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

6.8 General guidelines for educating mothers and demonstrating replacement feeding

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

Because poor preparation practices can have serious effects, it is important that HCWs know how to demonstrate preparation of commercial infant formulas in their clinical settings. Counselling and demonstrations about replacement feeding should be held in a private one-to-one session, out of view of other mothers.

- Education and demonstrations about preparing replacement feedings should be done by an infant feeding counsellor.
- Mothers who plan to use commercial formula should have a tin of the formula they plan to use. Make sure that the selected formula complies with national standards.
- Demonstrate where the mother can find the expiry date on the tin
- Mothers should participate in a demonstration on how to reconstitute replacement feeds. Mothers should then give a return demonstration to assure they 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 utensils to be used to mix feeds.
- Mothers should only prepare enough infant formula for one feed at a time. Tell the mothers to use prepared feeds within one hour, and that if they are not used within one hour, to discard them.
- Left over reconstituted feeds should not be stored without refrigeration because it becomes contaminated easily. Mothers can add it to cooked food.
- 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 (see Appendix 6-E) 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 being fed formula milk, 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 involved.
- 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 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 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 make infants 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 holding the cup under cold running tap water, or by placing 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 infant
12. Throw away any feed that has not been consumed within one hour.

When demonstrating the preparation of commercial formula:

- Counsellors 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 (see also Appendix 6-F).
- 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.

See Appendix 6-D for information on preparation of home-modified animal milk in the first six months of life

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.
See Appendix 6-E for guidance on how to feed an infant from a cup.

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 6.6). 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

Women living with HIV should be informed 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 affected breasts should be expressed and discarded frequently to prevent the 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 fulfil the infant's needs, she may express and heat milk from the affected breast and give it to the infant. (See Appendix 6-C for instructions on how to express and heat treat breast milk). 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 6.6: 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 ongoing prevention, consider increasing the frequency of feedings, up to every 3 hours
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 guideline.

6.10 Feeding after 6 months of age

All infants, including infants who continue to be breastfed, require nutritious 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 or replacement milks into the second year of life. For non-breastfed children receiving other sources of animal proteins, animal milk requirements after 6 months are about 250 mL (1 cup). 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 6.7).

Table 6.7 Age-appropriate complementary foods and their characteristics

Age	Texture	Frequency	Amount at each meal
6 months	Soft porridge; well-mashed vegetable, meat or fruit	2 times a day plus frequent milk feeds	2–3 tablespoons
7–8 months	Mashed foods	3 times a day plus frequent milk feeds	2/3 cup[a]
9–11 months	Finely chopped or mashed foods, and foods that the infant can pick up	3 meals plus 1 snack between meals plus milk feeds	2/3 cup[a]
12–24 months	Family foods, chopped or mashed if necessary	3 meals plus 2 snacks between meals plus milk feeds	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

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 infant is 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). Infants who have been receiving extended ARV prophylaxis with NVP should continue NVP until one week after all exposure to breast milk has ended.

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 mother 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 other milk.

HCWs 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.
  - She should heat treat this milk if she wishes to kill HIV (See Appendix 6-C.)
- 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. This means that the baby is getting enough milk.

- Gradually, she should replace the expressed, heat-treated breast milk with animal milk (or infant formula if the child is less than six months old).
- If the baby needs to suck, the mother should offer him a clean finger instead of the breast.
- 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 to:

- Ensure that all women eligible for ART are receiving it and that all HIV-exposed infants receive ARV prophylaxis according to national guidelines.
- If it is not safe for a mother to stop breastfeeding when her child is 12 months of age, discuss with her the underlying causes of malnutrition 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. When mothers do not get enough nutritious food, milk production declines. 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 health care providers should:

1. Counsel women to start antenatal clinics as soon as they suspect they are pregnant to monitor their health and the growth of the baby;
2. Advise pregnant women and lactating mothers to eat a variety of foods from the food groups in adequate amounts every day;
3. Advise pregnant women to eat an extra meal and snacks in between meals every day;
4. 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);
5. 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;
6. 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;
7. Counsel pregnant women and lactating mothers to avoid alcohol, narcotics or tobacco products;
8. Give pregnant women and lactating mothers iron and folic acid, and use iodized salt to avoid iodine deficiency as per national guidelines
9. Give all mothers vitamin A supplement (200,000IU) immediately after delivery or within 8 weeks of delivery;

10. Counsel pregnant women on the importance of immunization, use insecticide treated bed-nets and give her deworming tablets and ant malarial as per national guidelines;

11. Counsel pregnant women and lactating mothers on the importance of maintaining self-hygiene and hygiene of food, water and environment and

12. 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 for use in pregnant and lactating women 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 Comprehensive care, treatment and support

Providing family-centred HIV treatment, care and support for women living with HIV, their infants and families is an important part of the comprehensive approach to PMTCT. Healthcare workers must ensure that clients are engaged in on-going HIV care and treatment, which should be provided directly by RCH facilities or should be arranged by strategic and coordinated referrals.

Table 7.1: Comprehensive care, treatment and support services

Mother and partner	Child	Family
▪ Postpartum assessment of healing and routine physical assessment ▪ Determination for ART eligibility o CD4 testing o Clinical staging ▪ Prevention and treatment of OIs ▪ Sexual and reproductive health care, including family planning and counselling about safer sex for HIV-positive and HIV-discordant couples ▪ Cervical cancer screening ▪ Prevention and treatment of malaria ▪ Psychological and social support ▪ Nutritional counselling care and support	▪ HIV early infant diagnosis (HEID) ▪ ARV prophylaxis for HIV-exposed infants) ▪ Prevention and treatment of OIs ▪ Optimal infant feeding to promote survival and minimise HIV transmission ▪ Monitoring growth and development; nutritional supplementation ▪ Immunisations ▪ Disease staging of infected child ▪ Early initiation of lifelong ART for children found to be living with HIV. Referral to ART clinic if the facility does not provide ART	▪ Education and support for early testing and child follow-up care ▪ Adherence counselling ▪ Testing of siblings ▪ Family planning counselling, including contraceptive options ▪ Assessment and referral for ART ▪ Referral and linkage to community service organisations and agencies ▪ Palliative care and symptom management for all family members living with HIV infection

For a descriptive algorithm of a women's typical path through a PMTCT programme, please see Appendix 7-A.

Integration of PMTCT and RCH services

PMTCT services should be fully integrated into all aspects of RCH, including ANC services. How this integration occurs will depend upon the capacity and scope of services offered by the various facilities. Whether a healthcare facility delivers ART or combination ARV prophylaxis will depend upon the resources at the facility.

PMTCT-related RCH services include:

- HIV testing and counselling for women and their partners
- HIV testing and counselling for infants and children
- HIV clinical and immunological staging and other relevant investigations for determining ART eligibility
- Referral to nearby CTC for HIV-infected clients who are eligible for ART
- Provision of combination ARV prophylaxis for women who do not need ART
- Provision of infant ARV prophylaxis
- Postpartum care at the RCH facility until 42-day visit, when referral is made to CTC for comprehensive care and treatment
- Clinical and immunologic staging of infants or children determined to be HIV-infected
- Referral of infants or children with HIV infection to CTC for treatment

All pregnant women attending RCH should be encouraged to bring their partners. If a pregnant woman is accompanied by her partner to the first ANC visit, they should both be counselled and tested for HIV in the RCH clinic. A woman who attends her first ANC visit without her partner should be counselled and tested for HIV. If the woman can bring her partner to later visits, he should be counselled and tested then.

- Pregnant women living with HIV should receive a standard package of RCH services in addition to HIV-specific ANC, and should be evaluated for ART eligibility after testing positive, preferably at the RCH facility. Pregnant women/mothers with HIV should regularly be staged to detect possible changes in clinical conditions. Further the initial CD4 count should be repeated after 6 months. If the women will thereby qualify for ARV treatment, prophylaxis should be changed to treatment after the necessary preparations. (See chapter 5) During all visits the HCW should check adherence of the mother to C&T appointments.

Women and their partners who are eligible to receive ART for their own health will begin treatment as soon as possible. Therefore pregnant women are encouraged to attend ANC as soon as they know that they are pregnant (first trimester). ART will be initiated and monitored at RCH or at a CTC through a referral from the RCH facilities. Basic ANC, including combination ARV prophylaxis for women who do not need ART, will always take place at the RCH facility. All RCH facilities will refer mother-baby pair back to CTCs at the woman's first postpartum visit (i.e. day 8) to ensure that she accesses on-going care and treatment for herself and her family or any time thereafter (28^{th} day or 42^{nd} day visit).

All infants seen at RCH or other contact points should have their 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 will be seen at the RCH clinics (*Under-Five* clinics) for ARV prophylaxis, HIV testing, on-going counselling related to infant feeding and CPT. 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.

Infants and children diagnosed with HIV-infection will be staged at Under-Five clinics, and clinical and immunologic investigations will be performed there. Children with confirmed or suspected (presumptive diagnosis) HIV infection should be initiated on ART immediately or urgently referred to a CTC for initiation of ART. All children who are HIV infected will receive on-going care and treatment services at a CTC.

Regardless of which institution performs the follow-up tasks, 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.

7.2 Postpartum care and support

The mother-infant pair's first postpartum appointment should be within 1 week (7 days) of delivery. Additional appointments should take place 28 days and 42 days after delivery. Infants should be seen in the RCH clinic until the child is 24 months old. For RCH clinics that do not provide ART, the mother should be referred to a nearby CTC for ARV services which must be confirmed through a review of the client's CTC card. For HIV-infected infants, adherence to the CTC visit schedule should be checked and enforced during every routine Under-Five clinic visit.

Assessment of healing and routine physical assessment during postpartum visits

Practice Point

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.
- Check CD4 count of the mother

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.

Table 7: Family Planning services

Counselling on FP	Available methods in Tanzania	Lactation Amenorrhoea Method (LAM) Advantages
▪ High parity (more than four pregnancies) ▪ Unwanted pregnancies ▪ Early pregnancies (less than 20 years of age) ▪ Closely spaced pregnancies (less than two years between birth and start of next pregnancy) ▪ Pregnancy at late age (more than 35 years of age) ▪ Abortions ▪ Maternal/infant/child illness and death	**Short-acting methods:** ▪ Natural Methods: LAM ▪ Fertility Awareness Method o Calendar based o Symptom based o Withdrawal ▪ Oral pills: combined oral contraceptives (COCs) and progestin-only pills (POPs) ▪ Injectables: Depo-Provera ▪ Condoms: female and male condom **Long-acting methods:** ▪ Implants ▪ Intrauterine contraceptives device (IUCD) **Permanent Methods:** ▪ Tubal ligation	▪ Is effective, safe, non-hormonal ▪ Is non-invasive, suitable for most women ▪ Is immediately available, no supplies or procedures needed ▪ Has no medical appointment required ▪ Has no cost ▪ Can be used by mothers with HIV ▪ Allows time for the couple to decide on another contraceptive method ▪ Generates effective breastfeeding practices ▪ Promotes infant nutrition and protects baby from diseases

	▪ Voluntary surgical contraception (VSC): vasectomy	▪ Promotes mother-infant bonding

Women with HIV can have a healthy sexual life and can use almost any family planning method to prevent pregnancy. Contraceptive methods are detailed in Appendix 2-A. These must be readily available and used correctly and consistently.

- Hormonal methods of birth control appear to be safe for women with HIV, including women on ART.
- The effectiveness of oral contraceptives may be reduced when used in combination with ART, although the clinical significance of this risk has not been fully established. This risk does not apply to injectable or implanted hormonal birth control methods.
- The effectiveness of oral contraceptives is reduced if co-administered with the anti-tuberculosis antibiotic rifampicin, which speeds up the metabolism of contraceptive hormones. Emergency contraceptives can be used by all women including those with HIV.
- Most women living with HIV - including women with AIDS - can have an intrauterine birth control device inserted if they are on ART and are clinically wel
- Women with HIV or women who are at high risk for HIV infection should not use spermicides. Frequent use of spermicides containing nonoxynol-9 may increase the risk of HIV transmission.

Practice Point

All mothers should be counselled to start using some form of contraception within 6 weeks of delivery.

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.

Nutritional counselling, care 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 ARV prophylaxis or treatment 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 assess the extent of family support for the chosen infant feeding option and monitor how well infant feeding is progressing.

Psychological and social support services

Women living with HIV often require on-going psychological and social 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 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

7.3 Prevention of opportunistic infections (OIs) in adults

As HIV progresses, the immune function weakens and a person infected with HIV may develop OIs. Healthcare workers in RCH settings should be able to assess and recognise early the signs and symptoms of the following common OIs so that they can refer clients to appropriate care:

- TB
- PCP
- Candidiasis
- Herpes zoster
- Kaposi sarcoma
- Lymphoma
- Toxoplasmosis
- Cryptococcal meningitis

Practice Point

A patient of unknown HIV status who exhibits signs and symptoms of an OI should be tested for HIV as soon as possible and assessed for ART eligibility if found to be infected.

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

Tuberculosis (TB)

TB and HIV are overlapping epidemics. A person infected with HIV is 10 times more likely than a person who is HIV negative to develop TB. Healthcare workers should carefully assess clients who are living with HIV for the signs and symptoms TB infection.

Table 7.2: Recommended TB Screening Questionnaire (adults and adolescents)

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

- 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

Isoniazid Preventive Therapy (IPT)

TB preventive therapy 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.

Provision of IPT

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 Point

- 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.

PCP

To prevent PCP, malaria and toxoplasmosis, women should receive CPT according to the *National Guidelines for the Clinical Management of HIV and AIDS (2009)*.

Pregnancy and CPT

- All pregnant women living with HIV should be given CPT regardless of WHO clinical stage
- 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.

Adult CPT regimen

The dose of TMP-SMX is 960 mg daily, administered as 1 double-strength tablet (trimethoprim/sulfamethoxazole 160/800 mg) or 2 single-strength tablets (trimethoprim/ sulfamethoxazole 80/400 mg) daily.

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-P)
- CPT should be stopped if the patient develops significant side effects and replaced with dapsone 100 mg daily.

Practice Point

The appearance of a new OI in an adult or child may indicate progression of HIV disease and weakening of the immune system. Healthcare workers in RCH settings should be able to assess and recognise early the signs and symptoms of the following common OIs so that they can refer clients to appropriate care and treatment:

- TB
- Candidiasis
- Cryptococcal meningitis
- Toxoplasmosis
- PCP
- Herpes zoster
- Kaposi sarcoma

A patient of unknown HIV status who exhibits signs and symptoms of an OI should be tested for HIV as soon as possible and assessed for ART eligibility if found to be infected.

7.4 Care and support of HIV-exposed infants

HIV-exposed infants must be followed closely in order to provide important interventions that reduce the risk of MTCT and promote the health of the infant, mother and family. Because PMTCT interventions can only reduce the risk of perinatal transmission, a critical part of infant follow-up is to establish the HIV status of the infant. Early diagnosis of HIV infection allows the infant to be started on ART as soon as possible.

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 6-12 hours or as soon as possible thereafter. Follow-up visits for all infants should cover the routine care summarised in Table 7.3 and should be scheduled to coincide with the recommended immunisation schedule indicated on the *Road to Health* card. In general, HIV-exposed infants receive all of the components of routine infant care as infants who were not exposed to HIV.

Table 7.3: Specific components of follow-up care for HIV-exposed infants and their mothers

Infant	
History and Physical Examination	Conduct a history and physical examination. If the child is ill, follow Integrated Management of Childhood Illness (IMCI) guidelines, to assess and classify the sick child. ▪ Is there pneumonia now? ▪ Is there persistent diarrhoea now or in the past three months? ▪ Has the child ever had ear discharge? ▪ Are there enlarged lymph glands in two or more sites: neck, axilla or groin? ▪ Is there oral thrush? ▪ Is there parotid enlargement?
ARV prophylaxis	Evaluate the status of ARV prophylaxis: ▪ Is the child on prophylaxis? If yes: o Are there any problems? Should the child continue prophylaxis (according to national guidelines)? o Does the ARV dose need to be adjusted for growth? If the child is not on ARV prophylaxis: ▪ Should the child be receiving ARV prophylaxis according to national guidelines? A summary description of infant ARV prophylaxis is provided following this table; detailed information on infant ARV prophylaxis is provided in *Module 5, Specific Interventions for PMTCT.*
Developmental Assessment	At every visit, perform a developmental assessment. (See Appendix 7-D) ▪ Is there developmental delay or failure to achieve milestones?
Growth assessment	At every visit, weigh the infant, measuring length or height. Plot the infant's weight on its *Road to Health* card and interpret the curve. ▪ Is the weight low for the infant's age? ▪ Has weight gain been unsatisfactory?
Lab tests	Provide virologic and/or antibody testing according to national guidelines and the national testing algorithm. Initial viral testing with DNA PCR should be performed at four to six weeks of age or as soon as possible thereafter. ▪ 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. ▪ Infant HIV testing is reviewed below; detailed information on infant HIV testing and counselling is described in Module 4, HIV Testing and Counselling.
CPT	CPT should be given 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 (exposed). (See details in this module and in Appendix 7E.) ▪ Should CPT be initiated, dosage adjusted or discontinued?

Immunisations	▪ Immunise according to national guidelines (see Appendix 7B).
Infant feeding	▪ Provide counselling related to infant feeding and assess nutritional intake/status. Detailed information is provided in Module 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 (see Appendix 7C).
Tuberculosis	▪ Screen for signs or symptoms of TB. Follow national guidelines for assessment and treatment.
Malaria	▪ Recommend the use of insecticide-treated bed nets to prevent malaria.
Mother	
Mother's health	▪ Assess the mother's general health and her access to care for her own health. If on ART, assess adherence. ▪ Determine the mothers CD4 count ▪ Provide or refer for ART (if eligible and if not already on ART). ▪ Determine if her home environment is supportive. ▪ Determine if she should be referred for psychosocial support. ▪ Provide or ensure access to family planning services.
Family	▪ Are there other vulnerable children in the household? Have they been tested for HIV?

Infant ARV prophylaxis

All HIV-exposed infants are eligible for and should receive ARV prophylaxis for PMTCT. The duration of prophylaxis for the infant depends on whether or not the mother is receiving ART and on the chosen method of infant feeding (breastfeeding or formula feeding). Specific information about infant ARV prophylaxis is included in Module 5, *Specific Interventions to Prevent PMTCT*. Mothers should be encouraged and supported to adhere to the prophylactic regimen; counselling should be provided to explain the expected duration of infant ARV prophylaxis and the expected follow-up schedule for infant HIV testing.

Practice Point

The duration and dosing of ARV prophylaxis should be evaluated at every visit — infants who are taking ARV prophylaxis during the breastfeeding period will need dosage adjustments as they grow.

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 growth and developmental delays. HIV testing and counselling in infants and children is described in Module 4, *HIV Testing and Counselling*. Children with HIV infection should begin ART as soon as possible to prevent or limit disease progression.

Practice Point

- 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 Five 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. If testing and counselling have not been performed or if test results cannot be determined, HIV testing and counselling should be provided.

Cotrimoxazole prophylaxis

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) and continued until HIV infection can be excluded. For breastfeeding infants, HIV infection cannot be excluded until six weeks after complete cessation of breastfeeding.

Table 7.4: 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 yrs. 200mg SMX/40 mg TMP	5 ml	Two tablets	Half tablet	—
>6–14 yrs. 400 mg SMX/80 mg TMP	10 ml	Four tablets	One tablet	Half tablet
>14 yrs. 800 mg SMX/160 mg TMP	—	—	Two tablets	One tablet
Frequency: once a day				

Source: WHO, *Guidelines on Co-trimoxazole 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 nonspecific 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 7.5: 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 ▪ Generalised persistent noninguinal 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	Common in children who are HIV infected; uncommon in uninfected children
▪ PCP ▪ Oesophageal candidiasis ▪ Lymphoid interstitial pneumonitis ▪ Herpes zoster (shingles) with multidermatomal 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 viral 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.
- 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, an antibody test should be used to diagnose HIV infection.

Practice Point

Presumptive diagnosis of HIV infection should be made if the child:

1. Has a confirmed positive HIV antibody test[a], AND
2. Has a diagnosis of any AIDS-indicating condition[b], OR
3. Is symptomatic with two or more of the following:
   a. Oral thrush[c]
   b. Severe pneumonia[c]
   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.

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
- If available, a CD4 percentage of less than 20%

7.5 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.

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)

Overview of care and support of HIV-infected infants

HIV-infected children should receive routine paediatric care and should be monitored for HIV disease progression. All HIV-infected children less than 24 months should be started on ART regardless of WHO clinical staging or CD4 percentage.

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.

7.6 ART for adults and children

ART for women who are HIV infected is increasingly available nationally and is being provided through CTCs and selected RCH facilities. ART for women and children should be administered according to the National Guidelines for the Clinical Management of HIV and AIDS. See Appendix 7-H: ARV Medications for Adults and Children in Tanzania, and Appendix 7-I: Information about Antiretroviral Medications, for additional information.

During pregnancy and during the postpartum period, HCWs at all RCH facilities are responsible for assessing and monitoring clinical and immunological WHO stage and identifying women and infants who are eligible for ART.

Basic facts about ART

There are some basic facts about ART that HCWs should be aware of in order to better counsel their clients who are receiving treatment.

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.

Always use 3 different ARV medications for treatment

Healthcare workers should use only regimens that are effective enough to drastically reduce viral replication, prevent viral resistance and ultimately avoid treatment failure. At present, the only regimens that can do this for long periods of time involve a combination of at least 3 ARV medications from two different classes of ARV. Whereas mono or dual treatment (regimens with 1 or 2 ARV medications) can be used for short-term prophylaxis against MTCT of HIV, HCWs should not prescribe monotherapy or dual treatment for long-term ART.

ARV medications must be taken every day, otherwise they will not work

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.

Missing even one or two doses, taking medication late or taking medication with certain foods can lower concentrations of ARVs in the blood. Therefore, patient adherence is crucial to the efficacy of ART. ART should not be started or continued without consistent adherence assessment, counselling and support.

Selecting which ARV medications to use should be done by an experienced healthcare worker

In choosing which medications to administer, HCWs should select effective regimens with the fewest side effects. Selection is guided by the national ARV guidelines. Many

combinations of ARV medications work, whereas other combinations do not. Certain ARV medications are safe in pregnancy and others are not (e.g., EFV during the first trimester). See Chapter 5, Appendix 7-H and Appendix 7-I for more information.

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.

Clinical criteria for commencing ART in pregnant women

The *National Guidelines for the Management of HIV and AIDS* contain the WHO Clinical Staging System for HIV-infected adults and guidelines for commencement of ARVs in pregnant women. National guidelines also outline when ART may be delayed. For the WHO Clinical Staging System, see Appendix 7-F.

Practice Point

Clinical criteria for commencing ART in pregnant women

- Confirmed HIV positive, **AND**
- CD4 count of ≤350 cells/mm3 regardless of WHO clinical stage, **OR**
- WHO Clinical stage 3 or 4 regardless of CD4 count

National first-line ART regimens

First-line adult ART regimens

Pregnant women in the first trimester and those of childbearing age not using family planning methods:

- Zidovudine (AZT) + lamivudine (3TC) + nevirapine (NVP)

All other women:

- Zidovudine (AZT) + lamivudine (3TC) + efavirenz (EFV)

Clients who are also being treated for TB:

- Zidovudine (AZT) OR Tenofovir (TDF) + lamivudine (3TC) + efavirenz (EFV)

All other adults:

- Zidovudine (AZT) + lamivudine (3TC) + efavirenz (EFV)

In case of severe anaemia:

- Tenofovir (TDF) + lamivudine (3TC) + efavirenz (EFV)

Healthcare workers should be aware that pregnant women and women of childbearing potential are started on an ART regimen that is different from those recommended for other

adults. See Appendix 7-H for additional information on ARV medications for adults and children in Tanzania.

TB infection is a common way for HIV-infected clients who should be on ART, including pregnant women, to enter into care. Pregnant women who have TB face HIV treatment challenges. Several anti-TB regimens can be administered with effective ART in HIV-infected persons, whereas others cannot. Rifampicin, a potent drug used in the treatment of TB, should not be used with NVP if possible, because it alters Nevirapine serum levels and increases the risk of liver toxicity. The national guidelines call for substituting NVP with EFV in the first-line regimen. However, EFV should be avoided in the first trimester of pregnancy because it may cause birth defects. Therefore, pregnant women on TB therapy that includes Rifampicin should switch from NVP to EFV in the second trimester of pregnancy. Women who are not on ART but become eligible for treatment should initiate the EFV-based regimen in the second trimester. During the postpartum period, women may continue the EFV regimen if they have access to and are willing to use reliable contraception.

For information on the dosages and management of Tanzania's first-line ART regimens, see Chapter 5, *Specific Interventions to Prevent MTCT*, as well as Appendix 7-I.

ART for HIV-infected children

All HIV infected infants and children below two years of age 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. Presumptive diagnoses of HIV infection should be confirmed with antibody tests at 18 months of age at facilities where DNA PCR is not available. Only children with confirmed HIV infection continue ART.

The first-line ARV regimens for children are outlined below and also in Appendix 7-H. 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-G.

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 Point

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.

Clinical failure

PMTCT HCWs should be able to *preliminarily* assess clinical failure of an ARV regimen using the WHO Clinical Staging System. New or recurrent Clinical Stage 4 or the presence of at least 3 symptoms or infections after 6 months of ART may suggest treatment failure. In that case the HCW should seek advice from an experienced HIV clinician.

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.

Healthcare workers should refer HIV-infected patients to HIV care and treatment 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

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.

HCWs should ask clients about any side effects that they may have experienced and offer information on how to manage them. A list of common side effects of first-line ARV medications can be found in Appendix 7-I, Information about Antiretroviral Medications.

Clients should be questioned about other medications that may interfere with ARV medications.

If a HCW suspects that treatment is failing and adherence issues are ruled out, the patient should be referred back to HIV treatment services as soon as possible.

Healthcare workers should note that ARV medications require a reasonable amount of time to take effect, usually 6 to 12 months. Clinical events in the first 3 months after starting ART may be caused by immune reconstitution syndrome rather than clinical treatment failure.

7.7 Promoting adherence

Adherence to ART is critical to success. ART requires close monitoring and consistent support in order to promote good treatment outcomes and improve quality of life. Healthcare workers should discuss and assess ARV tolerance with clients and refer them to HIV treatment services so that side effects can be managed promptly. The following suggestions can help to support ARV tolerance and improve adherence.

Table 7.6: 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-I 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.

7.8 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:

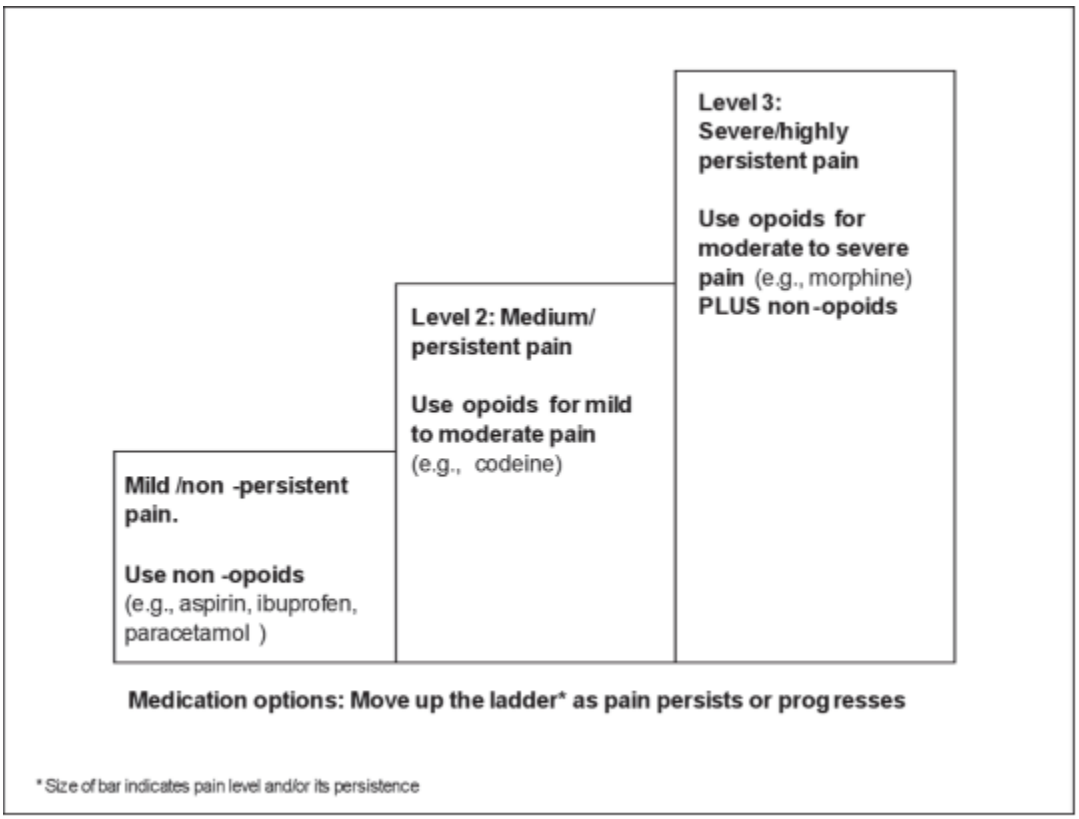
- Provide comfort and enhance the quality of life
- Provide relief from pain and other distressing symptoms
- Integrate psychological and spiritual aspects of patients care
- Offer a support system for patients and families

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.

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, Third Edition, February 2009.

Chronic pain should be treated on a regular basis. The pain control "ladder" is shown in Figure 7.1 above.

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.

Management of other symptoms is described in Appendix 7-I.

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. *These practices are used when caring for all clients, regardless of diagnosis*.

Practice Point

The following actions provide the means for implementing Standard Precautions:

- 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.
- Appropriately handle contaminated objects such as sharps (hypodermic and suture needles, scalpel blades, lancets, razors, scissors), patient care and resuscitation equipment and linen
- Ensure patients' environment is clean.
- Safely dispose of infectious waste materials, 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
- Healthcare workers should apply waterproof dressing to cover all cuts and abrasions
- Promptly and carefully clean spills, blood or other body fluids

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 3 types of hand hygiene:

1. Washing with soap and clean water
2. Washing with an antiseptic agent and clean water
3. 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

1	**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
2	**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
3	**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.
4	**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.
5	**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 and vaginal examination in labour (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 Point

- 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. For more information, see Appendix 8-A: Safe Disposal of Infectious Waste Materials.
- 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 Point

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

Practice Point

- 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. (See Appendix 8-B: Preparing Chlorine Solutions for Decontamination)
  - 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:

1. Decontamination

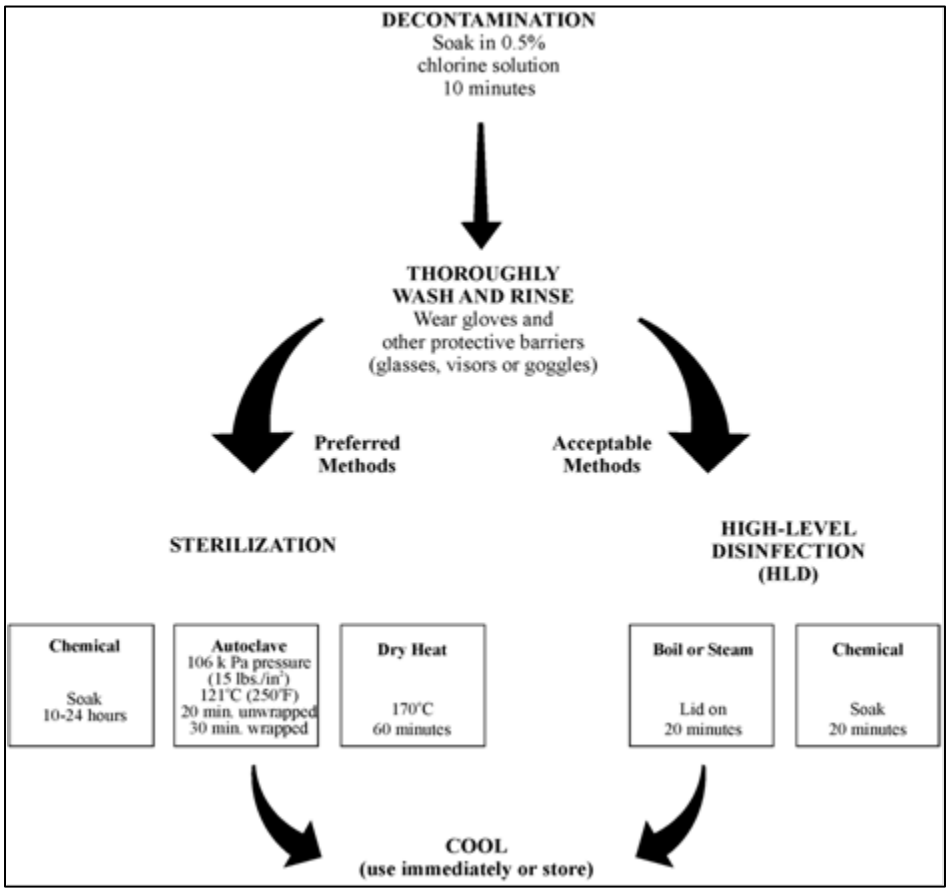
2. Cleaning

3. 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. For additional assistance with preparing the proper strength solutions for decontamination, see Appendix 8-B: *Preparing Chlorine Solutions for Decontamination*.

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. See Appendix 8-C: *Steps in High-level Disinfection*, for more information on the details of HLD.

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. For more information on the different types of sterilisation techniques, see Appendix 8-D: *Types of Sterilisation Techniques*.

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. For additional information on hepatitis B prophylaxis following exposure, see Appendix 8-E: *Hepatitis B Immunisation and Post-exposure 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: o Device visibly contaminated with source person's blood o Procedure involving needle placed directly into client's vein or artery o Deep injury ▪ Injury with hollow-bore needle ▪ High viral load in source person o Acute infection o 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. For more information on management of common side effects of ARV medications, see Appendix 7-H: *Information about Antiretroviral Medications*. 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	AZT 300 mg twice a day **and** 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** EFV 600 mg once nightly on an empty stomach *For pregnant women, replace EFV with LPV/r 133.33/33.3mg (3 capsules 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

Facility management to improve access to PEP

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.

Job-related 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 and skill-building

Personal risks for burnout

- Unrealistic goals and job expectations
- Low self-esteem
- Anxiety
- Personal attachment to clients with a fatal disease

Table 8.4: Signs and symptoms of burnout

Behavioural ▪ Frequent changes in mood ▪ Eating too much or too little ▪ Excessive alcohol consumption or smoking ▪ Becoming “accident prone” **Cognitive and Psychological** ▪ Unable to make decisions ▪ Forgetful, poor concentration ▪ Sensitivity to criticism	**Physical** ▪ High blood pressure ▪ Palpitations, trembling ▪ Dry mouth, sweating ▪ Stomach upset **Occupational** ▪ Taking more days off ▪ Arguing with co-workers ▪ Working more hours but getting less done ▪ Having low energy, being less motivated

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 its PMTCT services, there is a critical need to document PMTCT programme management and establish a nationwide PMTCT monitoring system. The purpose of this is to ensure that PMTCT programmes services are recognised and reported within existing health sector structures for proper management of resources and coordination of programme activities. Monitoring of PMTCT services does not imply the introduction of a new reporting system. Monitoring allows programme managers at the national, regional, district and facility levels to identify gaps and improve PMTCT-related activities and services. Implementing a standard national PMTCT management and information system will reinforce best practices, ease the burden of data management and training and allow comparisons among PMTCT sites.

9.1 Overview of the national PMTCT programme

The overarching objective of the PMTCT programme is to eliminate MTCT and HIV related mortality by 2015 through the reduction of HIV transmission from mothers to their children during pregnancy, birth and breast-feeding and ensuring their initiation into long term care and treatment.

PMTCT as a targeted response

PMTCT is a targeted response within the Health Sector Strategy for HIV and AIDS (2008 - 2012). The Ministry of Health and Social Welfare (MOHSW) placed PMTCT in Intervention Area No. 2 under the thematic area of Prevention. The activities of the Health Sector Strategy include:

- 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 Reproductive and Child Health (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 between the delivery of PMTCT and family planning and other reproductive health services
- Empower and create linkages with communities

The five strategic objectives of the PMTCT Programme are:

- To strengthen supportive policies, management and strengthen supply chain management for comprehensive PMTCT and paediatric care, treatment at all levels
- To develop institutional and human resource capacity in comprehensive PMTCT and paediatric HIV care, 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

The PMTCT program is under the Reproductive and Child Health (RCH) Section. It is headed by the Assistant Director of the RCH Section. There are 8 programs under the RCH Section.

1. Reproductive Cancers Unit
2. Expanded Program on Immunization (EPI)
3. Safe Mother 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 (ADH)

The PMTCT programme targets women of reproductive age, pregnant women, families and the community. Services offered are:

- HIV testing and counselling for pregnant women in ANC
- Partner HIV testing and counselling
- Delivery of ARV prophylaxis or treatment to prevent MTCT
- Safer delivery practices
- Infant-feeding counselling and support
- ART, care and support for Mothers living with HIV and children
- Infant/child monitoring for proper growth and development
- Family planning services
- Partner testing and counselling
- Infant/child HIV testing

Managerial processes

The PMTCT programme uses the four levels of management in the health system; national, regional, district, and facility levels. The referral hospitals are an extended arm of the Government; these hospitals are expected to lead and provide technical oversight to health care services in their respective zones.

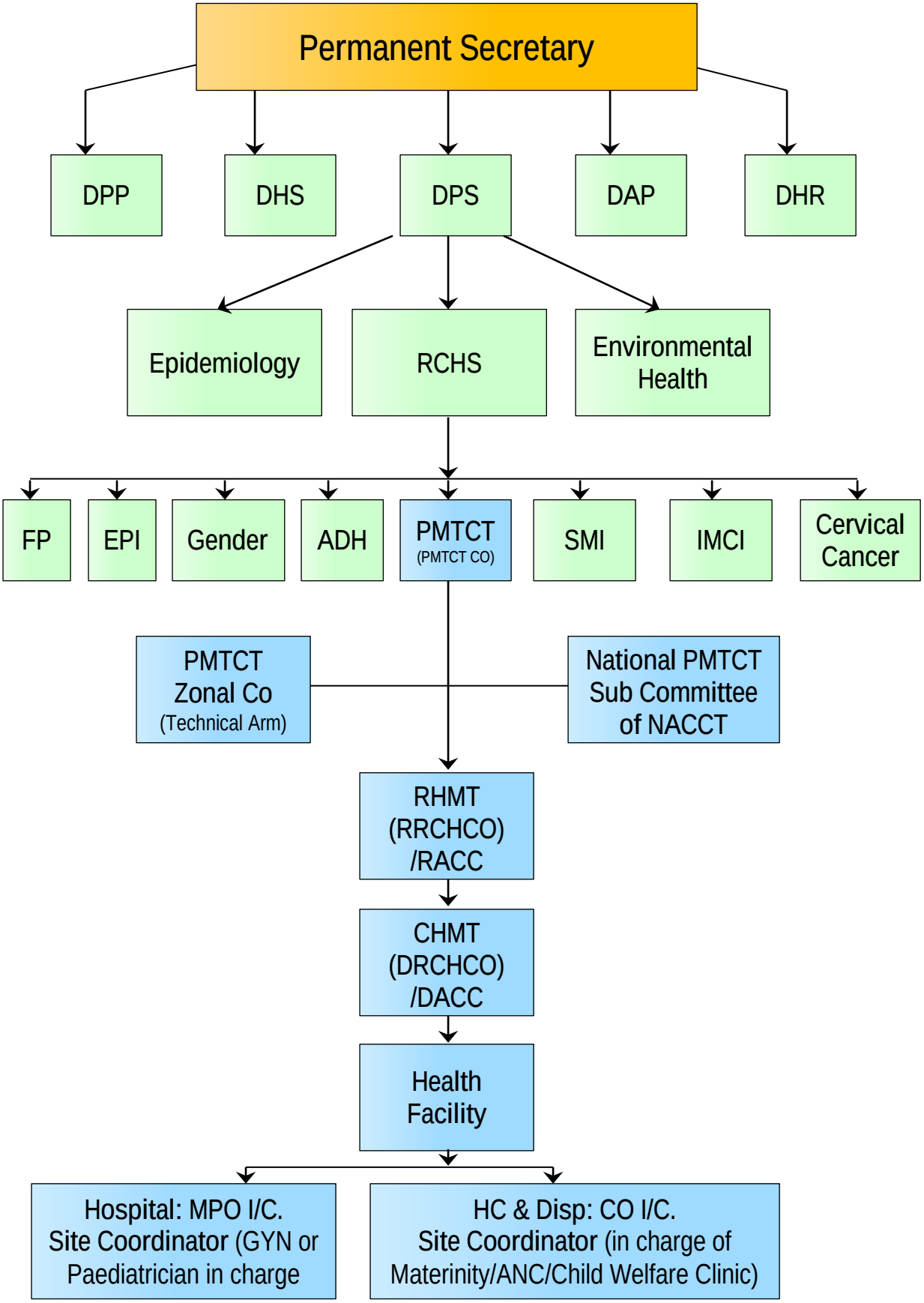
The National PMTCT Coordinator (at the RCH) who heads the PMTCT programme, and Regional/District Reproductive and Child health coordinators (RCHCO/DRCHCO) are responsible for assisting the Regional and District Medical Officers in coordinating the implementation of the PMTCT programme. RCHCOs are responsible for coordinating the implementation of PMTCT activities at various health facilities such as hospitals, health centres, and clinics. The role of the RCHCO and DRCHCO is to support the respective Medical Officers to coordinate PMTCT activities and share the reports with RHMT/ CHMT and work with the RACC/ DACC as they provide overall insight on HIV and AIDS matters in their respective areas. The role of coordination between the regional/district and national levels is very important within this decentralised approach to PMTCT programme planning and implementation.

Management at Regional level

Management of PMTCT services by the Regional Health Management Team (RHMT) whose chairperson is the Regional Medical Officer (RMO), has the following roles in PMTCT:

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

Figure 9.1: Organisation of National PMTCT Programme (Ministry of Health and Social Welfare)



At the regional level, the RCHCO 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 of PMTCT service providers
- Supervision of PMTCT services (facility and community based)
- Ensuring the availability and constant supply of HIV test kits, ARVs, supplies, medication for opportunistic infections, and infant feeding kits for PMTCT through proper and timely forecasting, quantification, and procurement
- Deployment/retention/replacement of trained staff for PMTCT services
- Receipt and processing of monthly/quarterly PMTCT reports from facilities
- Reviewing the PMTCT Program reports and providing feedback to facilities
- Coordinating HIV and AIDS health sector activities in the district
- Inclusion of PMTCT activity reports when reporting for the district AIDS activities
- Advocacy/social mobilization
- Developing programme communication support
- Collaboration/partnership 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 Community Contact Person. However, the exact composition and representation depends on the level of the facility.

The facility management team responsibilities are:

- On-site supervision
- Promotion of Baby Friendly Hospital Initiative
- Ordering PMTCT and EID supplies, testing kits and ARVs from main store
- Collection, preparation, analysis and discussion of PMTCT monthly reports
- Submission of PMTCT reports to the district medical office
- Facilitation of community-based activities
- Collaboration/partnership with other care giving resources in PMTCT, HIV and AIDS
- Referral of clients to CTC and other services, e.g., family planning, TB clinics

See Figure 9.1 for an illustration of the PMTCT programme structure.

9.2 PMTCT commodities management

Introduction

The PMTCT Programme cannot succeed and virtual elimination of new paediatric infection cannot be achieved without a reliable and consistent supply of high quality medications, HIV test kits, DBS kits, laboratory reagents, related medical and other supplies needed to support service delivery. Therefore, the availability of medications, equipment and other supplies is a critical portion of the service. Not only should their receipt by the end user be guaranteed and constant, but also given their high value, they need to be transported and stored securely. This will be achieved through proper inventory management, distribution and rational use of the medicines. Close control of medicines and other supplies will reduce wastage of medicines and supplies through expiration and pilferage.

Investing in effective and efficient supply chains can maximise the use of resources, reduce waste, improve service quality and ultimately ensure that customers receive the products they need.

The purpose of a logistics system is to fulfil 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

Procurement

The National AIDS Control Programme (NACP) procures ARV medications for PMTCT and HIV treatment programmes through the Medical Stores Department (MSD), which then distributes them to accredited healthcare facilities. On receipt of the PMTCT commodities at a facility, a pharmacist or responsible person in the pharmacy should cross-check the PMTCT commodities received to make sure they reconcile with the written documents and sign the delivery note and invoices, which serve as proof of delivery. Pharmacy personnel should keep the clinical staff informed (specifically at the ANC, labour and delivery and Under Five Clinics) on the current stock levels of ARVs, particularly on items nearing stock-out.

Management of PMTCT commodities

Ordering

Generally HIV commodities are ordered every three months from MSD using Requisition and Report Forms (R and R). The report and request form for ordering ARVs is the A2 form and the report and request form for ordering Rapid HIV and DBS test kits is the A5 form. Facilities will need to take into account the increased pool of HIV-exposed children that will require ARV prophylaxis throughout the breast feeding period

PMTCT Commodities should be ordered monthly using monthly consumption and order forms. In order to complete the forms, the following records must be up-to-date, complete and available:

- PMTCT Medicine Register (See appendix 9- L)and Usage Register for HIV test kits and DBS kits (See appendix.9-M) for the reporting period
- Ledger books for medicines, HIV test kits and DBS kits with updated and current physical inventory

For Stand-alone PMTCT facilities without CTC services

Facilities without CTC services order their commodities from mother sites or from districts by filling form A3: *Monthly consumption report for ARV medicines* (See Appendix 9-N) for stand-alone facilities, and form A6: *Monthly usage report for HIV test kits* (See Appendix 9-O). The facilities will send their consumption report to the responsible health personnel who have been assigned the role of filling the monthly consumption report for HIV test kits.

For PMTCT sites within a health facility that provide CTC services

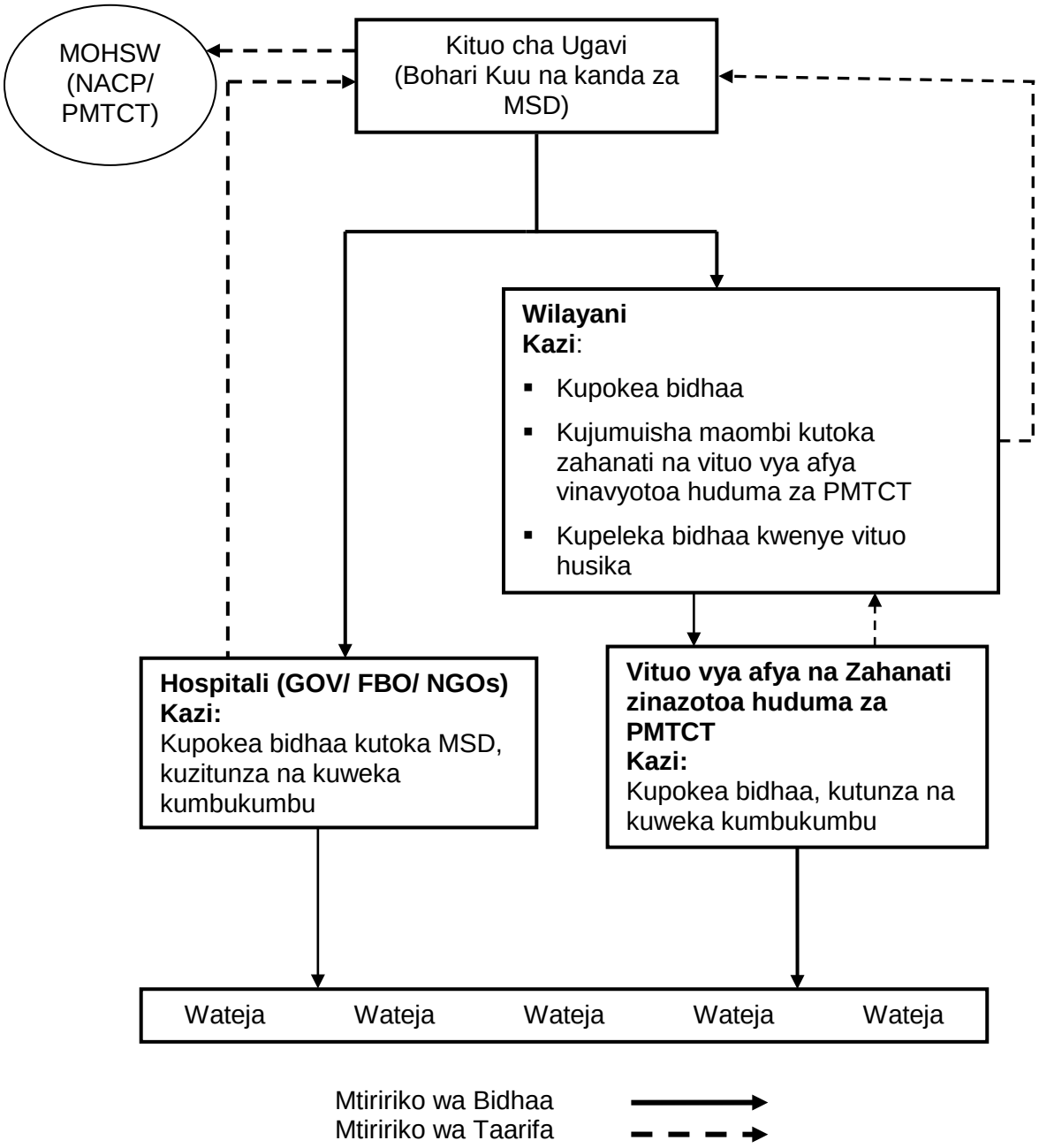
All PMTCT sites within a healthcare facility that provide CTC services will order commodities from the facility pharmacy and report monthly on their consumption. Assigned personnel with the responsibility of aggregating the final report will send this information to MSD.

Receiving commodities

Procedures should be in place to monitor and document the movement of commodities through the different levels of management from the national to the regional, district and finally the facility. Accompanying documents should be available. Upon receiving commodities:

- Reconcile product received v/s the accompanying documents involving relevant health committees
- Enter the received commodities into the ledger book before issuing to the clients

Figure 9.2: Commodities management, movement of supplies and information



Storage

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

- Prevent theft and pilferage by keeping stocks in locked enclosures and using other appropriate security measures during storage, reception, and transport
- Clean and disinfect the store room regularly, and take precautions to discourage harmful insects and rodents from entering the storage area.
- Store HIV and AIDS commodities in a dry, well-lit, and well-ventilated storeroom at less than 25 ° C. Keep them out of direct sunlight.
- Maintain cold storage for products needing it, ordinarily at 2-8° C.
- Protect the storeroom from water penetration.

- Keep fire safety equipment accessible, functional and train employees to use it.
- 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 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

Dispensing of Commodities

Antiretroviral medicines for prophylaxis should only be dispensed to treatment-ready clients with clear instructions and advice.

The dispenser should make sure that the patient understands the dosage and drug intake schedule as well as instructions regarding the storage and food requirements. The dispenser should also caution patients about possible side effects, respond to specific questions and problems related to ART encountered by patients and advise them on measures to be taken to reduce these side effects including immediate return to the clinic when that happens.

Records

In order to facilitate efficient administration and management of PMTCT commodities, all information regarding commodity usage should be recorded in dedicated register books i.e. PMTCT Commodity Register and Usage Register/ form for rapid HIV test kits.

Equipment, supplies and medications needed for PMTCT services

Antiretroviral medicines (ARVs)

- Nevirapine tablets and suspension
- Zidovudine tablets
- Lamivudine tablets
- Other medicines for ART

Medicines for prevention and treatment of opportunistic and common infections

- Clotrimazole vaginal pessaries (doses), pack of 6
- Clotrimazole cream
- Cotrimoxazole syrup (for children)

- 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 25 tests
- Vacutainer tubes (pack of 100)
- Vacutainer needles (pack of 100)
- DBS Kits
- 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

9.3 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.

Monitoring the PMTCT programme will help:

- Assess programme performance
- Detect and correct performance problems
- Make more efficient use of PMTCT programme resources

Evaluation is measuring 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. A monitoring system is a group of components used to track programme activities.

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
- ART and prophylaxis to prevent MTCT
- Counselling and support for safe infant-feeding practices
- Family planning counselling or referral

The PMTCT Monitoring and Evaluation system includes:

- Clearly defined indicators (global, national and facility)
- Standard tools (forms and registers)
- Data sources and methods
- Clear guidelines and protocols (national PMTCT guidelines, training manuals and standard operating procedures)

For example, guidelines and protocols might address:

- The data quality assurance procedures that should be implemented
- The frequency and recipients of reports
- The use and dissemination of reports

Healthcare providers will record the PMTCT services provided in standard PMTCT ANC, PMTCT maternity (L&D), PMTCT Care and PMTCT Mother and Child Follow-up registers as part of routine RCH data collection. Monthly summary reports summarise register information for programme management and reporting. In every healthcare facility where PMTCT services are delivered, it is important to designate staff for monitoring and outline their responsibilities. Clear roles and responsibilities should be defined for staff involved in data collection, analysis, reporting, dissemination and data use.

At the district level

On an annual basis the CHMT can evaluate PMTCT service utilization and coverage by comparing performance of different facilities using facility indicators and identify poorly performing facilities. The CHMT can then make a thorough investigation of the causes for the underperformance. These may include:

- Supportive supervision coverage and data quality assurance
- Staffing level of the facility in relation to workload
- Availability of trained staff on PMTCT
- Commodity availability

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

- Increasing supportive supervision to the facility
- Improving the staffing level or reassign available staff more efficiently
- Providing more training to facility staff
- Ensuring adequate supply of commodities and proper usage

9.4 PMTCT monitoring indicators

PMTCT 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 information recorded by HCWs in PMTCT registers and monthly summary forms and data from the National Bureau of Statistics. The PMTCT programme indicators are established at the national level according to the needs, resources and standards of the national PMTCT programme in line with internationally accepted definitions of these indicators. The 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-infected pregnant women assessed for ART eligibility (either by clinical staging or CD4)
- 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

Table 9.1 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
1b	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	Total number of Pregnant attend ANC at least once **+** Unknown L&D
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 are on ART at ANC **+** Number of HIV Positive pregnant women who receive NVP, AZT and 3TC at L&D for the first time	Estimated number of HIV infected pregnant women by NBS
2b	Percentage HIV Positive 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 are on ART at ANC **+** Number of HIV Positive pregnant women who receive NVP, AZT and 3TC at L&D for the first time	Total number of HIV Positive pregnant women through PMTCT (came with known positive ANC **+** Tested Positive ANC **+** Tested positive L&D)
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 exposed infants
3b	Percentage of HIV exposed infants who	Number of HIV exposed infants who received NVP prophylaxis at L&D	Total number of live birth HIV exposed infants in L&D

	Indicator Description	Numerators	Denominators
	received ARV prophylaxis	**+** Number of HIV exposed infants who received NVP prophylaxis at follow up visit for the first time	
4a	Percentage HIV Positive pregnant women assessed for ART eligibility	Number of HIV Positive pregnant women assessed for ART eligibility	Number of HIV Positive pregnant women through PMTCT
4b	Percentage HIV Positive pregnant women assessed for ART eligibility	Number of HIV Positive pregnant women assessed for ART eligibility	Estimated number of HIV infected pregnant women
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
6	Percentage of HIV positive pregnant women assessed by CD4	Number of HIV positive pregnant women assessed by CD4	Number of HIV infected pregnant women through PMTCT
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
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

	Indicator Description	Numerators	Denominators
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	New number of pregnant women tested at ANC

9.5 PMTCT data recording and reporting system

The PMTCT programme uses standard registers, Mothers Health Cards, Child Health Cards and monthly 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 should 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 and how it should be recorded. In order for this to occur, healthcare workers need training, supervision and support to assure that PMTCT monitoring data are consistently and reliably recorded.

PMTCT Registers

PMTCT registers are used in healthcare settings to record PMTCT services that are being offered to pregnant women, their partners and their children during the child follow up visits. These registers include

- PMTCT ANC Register
- PMTCT Labour and Delivery register
- PMTCT Care Register
- PMTCT Mother-Child Follow up register
- PMTCT Medicine Dispensing Register

PMTCT ANC Register (Appendix 9-A)

The PMTCT ANC register contains basic information such as the date when the mother started ANC attendance, ANC Card No, facility code if referred, gestation age (in weeks), date of pre-test counselling, ,date of test, HIV test results, date of post-test counselling, HIV status of partner and comments. The PMTCT ANC register will be placed in ANC department in line with the MTUHA book 6. All HCWs in antenatal clinics will be responsible for completing these records at each ANC visit. The In Charge of the ANC section will be responsible for supervising the filling up of forms on a daily basis in order to ensure quality of data.

Labour and Delivery (L&D) Register (Appendix 9-B)

This register includes data related to HIV status of the pregnant woman from ANC, HIV test result from test at L&D, ARV dispensed or swallowed during ANC, ARV swallowed or dispensed during labour, infant ARV doses, newborn feeding practice and linkage to CTC. The PMTCT L&D register will be placed in the labour ward in line with the MTUHA book 12. All HCWs in L&D will be responsible for completing these records during labour and delivery. The In-charge of the labour ward will be responsible for supervising the proper filling up of forms on a daily basis in order to ensure good quality of data.

PMTCT Care Register (See Appendix 9-C)

This register is used to record all pregnant mothers with HIV positive status. The register includes identification of the patient, ARV medications, unique CTC ID number, age, gestation age, TB treatment start date and stop date, CPT start date and stop date, CD4 count (if referred), clinical staging of the patient, date of medical eligible for ART, why medically eligible, refill/date. The PMTCT Care register will be placed at ANC department. Healthcare workers will be trained on HIV care and be responsible to complete these records at each visit. The head of the ANC department will be responsible for supervising the filling up of forms on a daily basis in order to ensure quality of data.

Mother-Child Follow-up Register (See Appendix 9-D)

This register is used to record follow-up care provided to mothers and HIV exposed infants, including CPT dosing and HIV testing for exposed infants.

Practice Point

PMTCT programme monitoring data should be collected daily and recorded accurately and consistently in PMTCT registers in a way that protects client's confidentiality.

- Registers should not identify clients by name but by registration number.
- Registers should be kept in locations away from public viewing.
- Registers should be accessible only to healthcare workers who need to work with them.

Mothers' and Child's Health Cards (Appendix 9-F and 9-G)

Health cards provide important records of client health information. Some of this information may be used to complete PMTCT registers. Health Care Workers should be sure to record and update information on the Mother's Health Card and Child Health Card at each visit.

- **Mother's Health Card** (See Appendix 9-F). 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** (See Appendix 9-G). 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.

Transfer Form (Appendix 9-E)

The HCWs should document transfers on an appropriate form to ensure that all clients in need can go to their nearest PMTCT/CTC clinic for comprehensive diagnosis and/or management of HIV.

Quality Control of Data

Data collected through registers maintained at the healthcare facility is the source of all information related to Tanzania's PMTCT programme. Given the importance of ensuring the accuracy and confidence in this data, the registers need to be reviewed regularly.

Data Use

The use of data is very important in order to ensure smooth running of the programmes. Data can be used at different levels of programme management for various purposes.

National Office

The national office has the overall responsibility for monitoring and evaluating the national PMTCT Programme. The national office should use the data to:

- Develop program plans and budgets
- Provide feedback to regions and districts, or directly to healthcare facilities to help them 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 are responsible for using the data for a number of purposes:

- Providing feedback to healthcare facilities in an effort to help identify and address problems and improve implementation of PMTCT services
- Program planning and budgeting
- Ensuring adequate coverage of PMTCT services within the area
- Reporting to and exchanging information with the national office

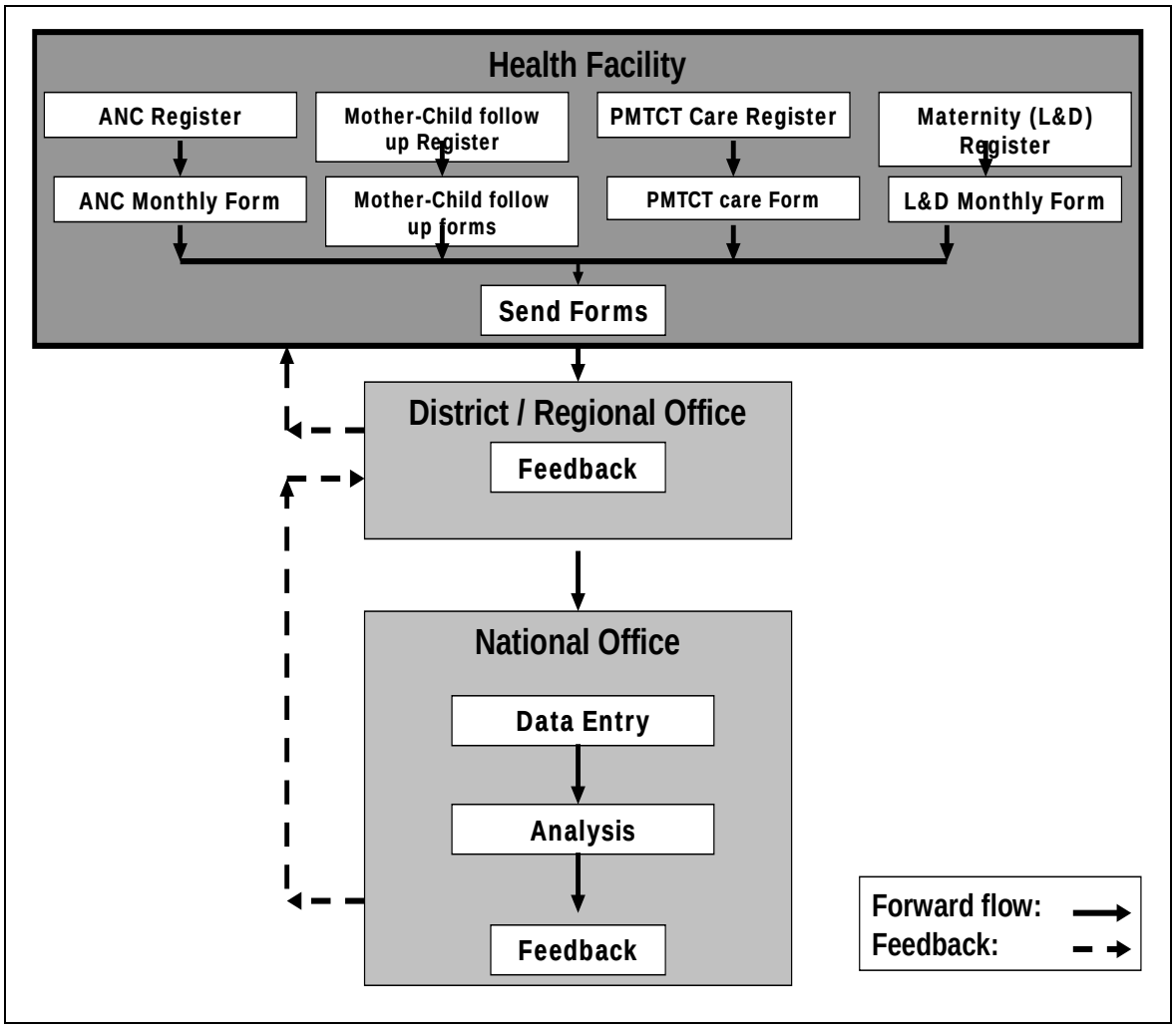
Health Facility

Staff at PMTCT healthcare facilities should review each monthly summary form (Appendix 9-I and 9-J) to track program progress and gaps and to improve implementation of PMTCT services. Supervisors should conduct monthly or periodic meetings with staff to disseminate findings and review progress, problems and challenges.

Reporting PMTCT monitoring data

To track the progress of PMTCT activities, health facilities submit monthly/quarterly summary forms to the districts through the District Reproductive and Child Health Coordinator (DRCHCO). See Appendices 9-I and 9-J) for the monthly summary forms. This office sends forms to the Regional Reproductive and Child Health Coordinators (RRCHCO) and finally to the PMTCT program RCH Section. At the national level, data analysis is done and feedback to the lower levels is provided. See Figure 9.3.

Figure 9.3 Data Collection and Reporting Procedure



Reporting is done on a monthly/quarterly interval:

- Healthcare facilities send reports to the district by the 7th of the next month/quarter.
- Once received, districts aggregate healthcare facility reports and send them to the regional office by the 14th of the month/quarter.
- Then, regions make copies and send the originals to the central level by the 21st of the next month.
- Feedback is done at all levels and in both directions.

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

9.6 Organisation of a health facility for ART and RCH services integration

Background

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

The majority of these clinics are a long distance from RCH clinics which can be a barrier for clients. Experience has shown that, even in the facility with CTC services, the number of pregnant women with HIV infection who are enrolled into ongoing CTC services is not significant.

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

- Ineffective linkage between RCH and ART programs
- No priority given to the HIV-infected pregnant mothers referred to CTC
- Excessive numbers of women are lost to follow up, leading to missed opportunities for effective PMTCT
- Missed opportunities for follow up of HIV exposed infants who attend RCH for other services

Rationale

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

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

- Identifying HIV exposed infants and their mothers in RCH clinics
- Assessing maternal health status and ART eligibility within RCH services
  - Clinical evaluation
  - WHO staging
  - CD4 cell count
- Providing Antiretroviral medicines within RCH
  - MTCT prophylaxis
  - ART for eligible clients
- Providing effective HEI, including:
  - Performing HIV testing (early infant diagnosis)
  - Monitoring for evidence of HIV disease

- Providing cotrimoxazole preventive therapy (CPT)
- Prescribing ARV prophylaxis
- Counselling on infant feeding counselling
- Monitoring growth and development monitoring
- Administering immunisations

Modalities for Integration of Art Services at RCH

Criteria to provide CTC services at RCH clinics Health Facilities that are providing both PMTCT a*nd* CTC services:

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 trained on ART and available to provide services directly at RCH and an ART Nurse counsellor in place, and
- 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 where CTC number will be obtained/or assessed, support and certify according to the minimum criteria for CTC and provide CTC number, and
- 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

1. Orientation of the regional, district managers (RHMT/CHMT)
2. Community sensitization on the needs and advantages of the integration
3. Assessment and certification of facilities fulfilling the above outlined criteria
4. Sensitization of facility leadership and health care workers at the selected site
5. 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 site)
6. Building capacity of RCH staffs to collect CD4 samples at RCH
7. Sensitization of the onsite laboratory staff to oversee collection of CD4 samples at RCH

8. Strengthening the CD4 transportation of CD4 samples and CD4 test results in sites without Point of Care CD4 machines
9. Establishing a pharmacy store / cabinet at RCH for OI and ARVs
10. Reviewing client flow pattern at RCH to observe:
    a. First ANC visit
    b. Client is registered for ANC services; receives couple, group or individual HIV testing and counselling; is asked to invite their partner to come for testing (if the woman came alone)
    c. Women who test HIV-positive are enrolled into care and treatment services. The services include:
    d. WHO clinical staging
    e. TB and OI screening
    f. Samples obtained for CD4 count, haematology(including haemoglobin levels) and biochemistry
    g. Initiation of AZT at 14 weeks of gestation or later
    h. Schedule appointment for test results within 3 – 7 days
    i. Counsel women eligible for ART on adherence at least once if ready to start treatment.
11. Follow up visits at RCH (during pregnancy) include:
    a. Routine ANC services
    b. Investigation results including CD4 count
    c. WHO staging
    d. ART to those eligible and refilling for those already on ART or prophylaxis.
    e. Counselling for other preventive services. e.g. condom use, CPT, Positive Health Dignity and Prevention (PHDP)
12. Follow up visit during post natal (4-6 weeks after delivery and thereafter). For HEI, will receive the following
    a. Early infant diagnosis; DBS PCR results are given with post-test counselling
    b. Cotrimoxazole prophylactic therapy (CPT)
    c. Infant feeding counselling
    d. Infant ARV prophylaxis provision and refill .
    e. ART for HIV infected infants
        i. HIV infected infants will be followed at RCH-CTC for up to 18 months of age before being referred to CTC
    f. For the HIV+ mother with HIV infected infant will continue receiving care and treatment services at RCH until the infant is 18 months of age and then transferred to 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, 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 and the CHMT
- Document health facility visit findings and proposed actions and share with the responsible staff and CHMT members to follow up

Recording and reporting

- Record data on the PMTCT Care register, PMTCT medicine dispensing register, CTC 1,CTC2 patient card, pre-ART and ART registers located at RCH
- Enter information into both PMTCT Care register and CTC recording tools
- Obtain and maintain CTC number from main CTC
- Encourage HIV positive women who were enrolled at the main CTC (pre-ART/ART) who become pregnant to continue with C&T services at RCH
- Refer mother back to CTC at completion of Mother and Child services
- Record women who were not yet on ART in the pre-ART register at the RCH using coded 'CTC' in the left margin of the register
- Enter pregnant women on ART into their respective cohorts depending on the month/year of start ART. In the ART register, they will be separated from clients who initiated ART at the RCH CTC using a double line drawn in the lower third of the page.
- Take all CTC2 files to main CTC to update 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.

9.7 PMTCT supportive supervision

Supportive supervision is the process of ensuring that personnel have the knowledge and skills required to carry out their responsibilities effectively and providing immediate on-the-job training as needed. Supervision helps the individual and healthcare facility improve the PMTCT programme by identifying and overcoming barriers to service delivery.

Supervision at the facility level

Ongoing supervision is an important, often overlooked, step to ensuring quality PMTCT 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. PMTCT 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. Motivation is hard to maintain in such an atmosphere. Supervisors often lack the technical, managerial, or supervisory skills needed to effectively evaluate PMTCT facilities. In addition to assessing performance, supervisors are also expected to monitor services, evaluate management, and ensure that the healthcare facility supply chains are working properly, all in a short period. Sufficient budgets should be allocated to enable conduction of supportive supervision, provision of adequate technical guidance and feedback to improve PMTCT service delivery.

Supportive supervision of PMTCT services promotes quality at all levels of the healthcare system by strengthening relationships within the system, focusing on the identification and resolution of problems, and helping to optimise the allocation of resources, promoting high standards, teamwork and better two-way communication.

A cornerstone of PMTCT supportive supervision is working with PMTCT staff to establish goals, monitor performance, identify and correct problems, and proactively improve the quality of PMTCT service. Together, the supervisor and PMTCT workers identify and address weaknesses on the spot, thus preventing poor practices from becoming routine. Supervisory visits are also an opportunity to recognise good practices of PMTCT workers, thereby maintaining their high level of performance. Moving from traditional, hierarchical PMTCT supervision systems to more supportive ones requires innovative thinking, national buy-in, and time to change attitudes, perceptions and practices.

Table 9.2 highlights the main differences between traditional and supportive supervision.

Table 9.2 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
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

Action	Traditional supervision	Supportive supervision
		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

Supportive supervision of PMTCT services is intended to:

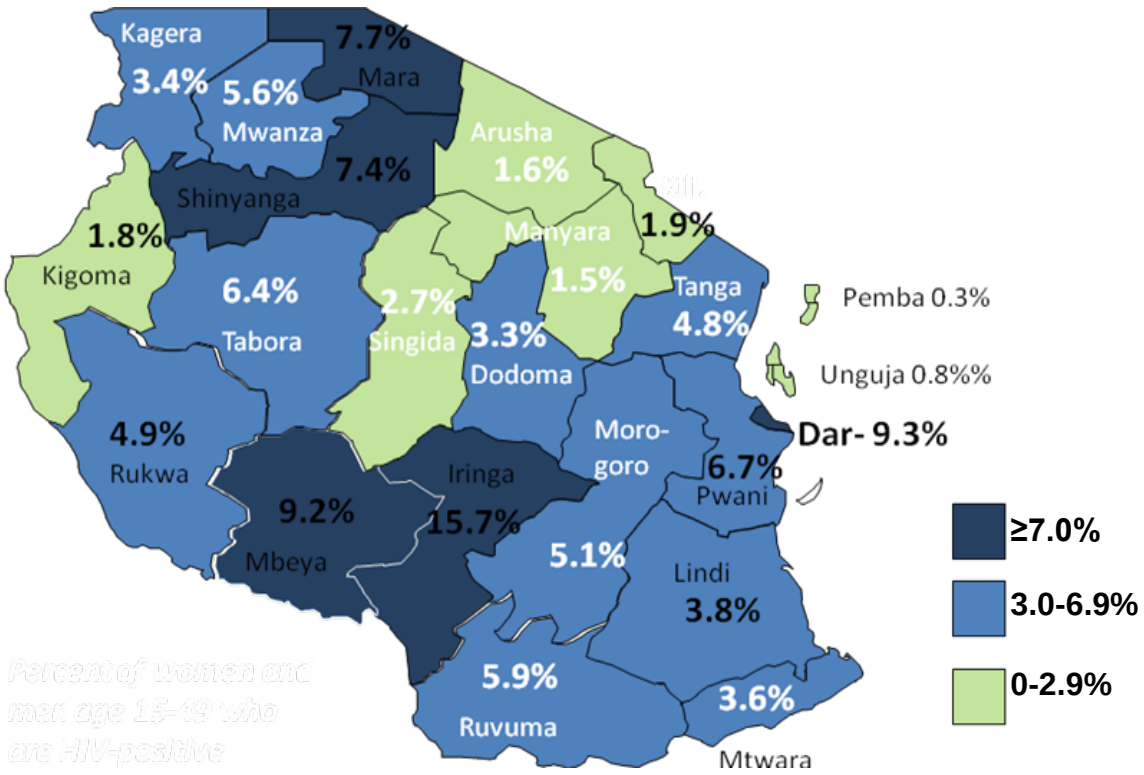
- Improve worker's performance by providing support (technical) and acknowledging their contribution to the success of the program
- Obtaining valuable information on program functioning
- Facilitating on-site participatory problem solving
- Assuring the program is successful in meeting the needs of HIV-positive women and their infants and families

Specific matters in supportive supervision that are usually considered:

- Adherence to protocols (e.g., ANC client flow, HIV testing, sharps disposal, record keeping and confidentiality)
- Supply and drug management (availability, stock taking, recording and ordering). These include forms, ARV prophylaxis, and HIV test kits.
- Record keeping — accuracy of recording (lab, ANC, maternity), timeliness, interpretation
- Observation of clinic activities and, with patients' consent, observation of counselling sessions
- Review of staffing needs (vis-à-vis client volume)
- Training needs of staff providing PMTCT services
- Provision of services to referred clients

Appendices

APPENDIX 1-A:
HIV Prevalence by Region



(Source: 2007-08 Tanzania HIV/AIDS and Malaria Indicator Survey)

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 3-A: PART VII of the National HIV and AIDS (Prevention and Control) Act, 2008

PART VII
STIGMA AND DISCRIMINATION

Prohibition of discriminatory laws, policies and practice

28. A person shall not formulate a policy, enact any law or act in a manner that discriminates directly or by its implication persons living with HIV and AIDS, orphans or their families.

Restriction of health practitioners to stigmatize or discriminate

29. Any health practitioner who deals with persons living with HIV and AIDS shall provide health services without any kind of stigma or discrimination.

Prohibition of other forms of discrimination

30. A person shall not -

(a) deny any person admission, participation into services or expel that other person from any institution;
(b) deny or restrict any person to travel within or outside Tanzania;
(c) deny any person employment opportunity;
(d) deny or restrict any person to live anywhere; or
(e) deny or restrict the right of any person to residence, on the grounds of the person's actual, perceived or suspected HIV and AIDS status.

Prohibition of stigma and discrimination

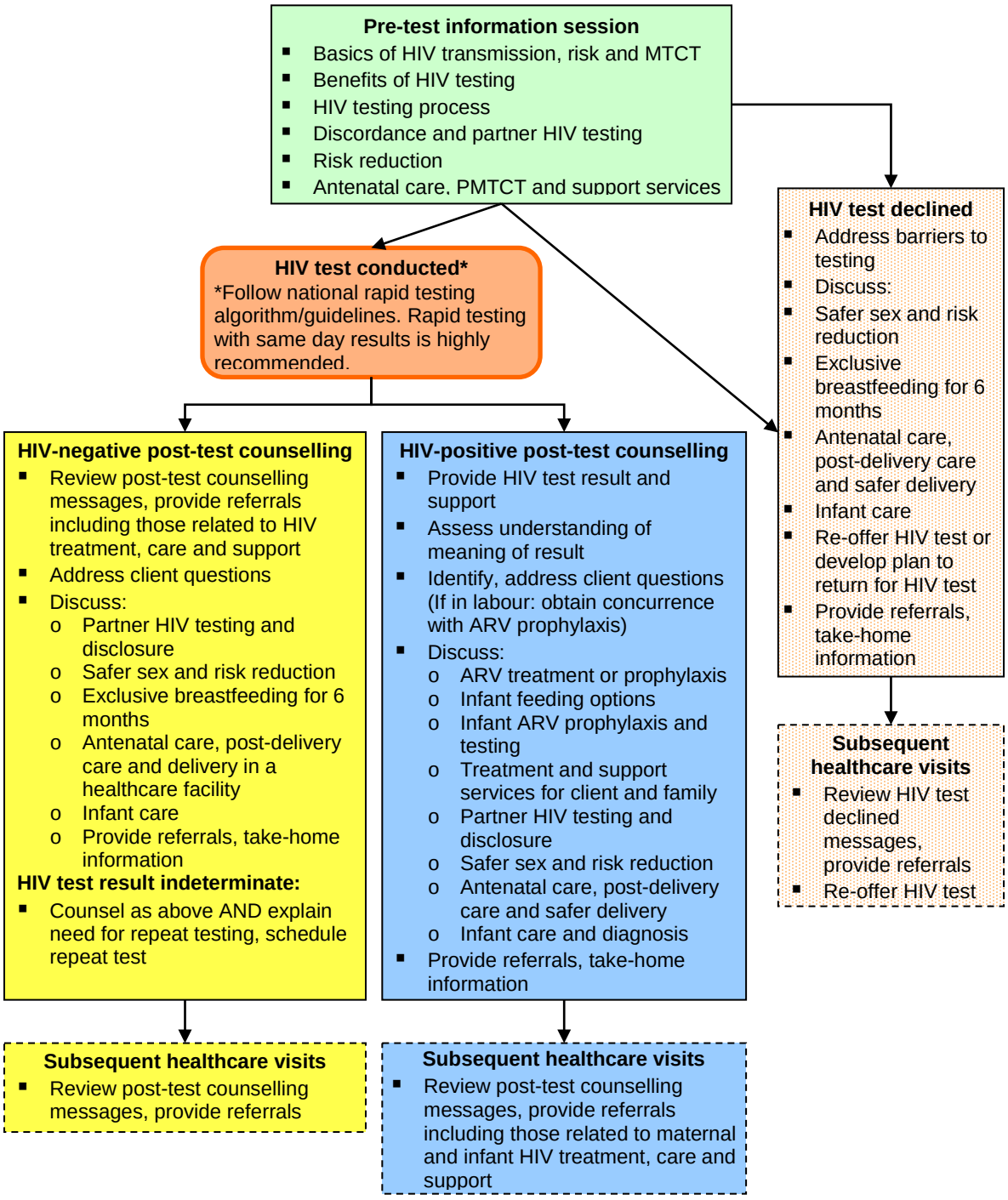
31. A person shall not stigmatize or discriminate in any manner any other person on the grounds of such other person's actual, perceived or suspected HIV and AIDS status.

Offences relating to stigma and discrimination

32. Any person who contravenes any provision under this Part commits an offence and on conviction shall be liable to a fine of not less than two million shillings or to imprisonment for a term not exceeding one year or to both.

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[2].
- 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.

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.

[2] 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).

- 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
- 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 2 mm lancet. A 2 mm 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.

Table 6.1: 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-Five 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 (see Table 3.3)

- 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.

Table 3.3: 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

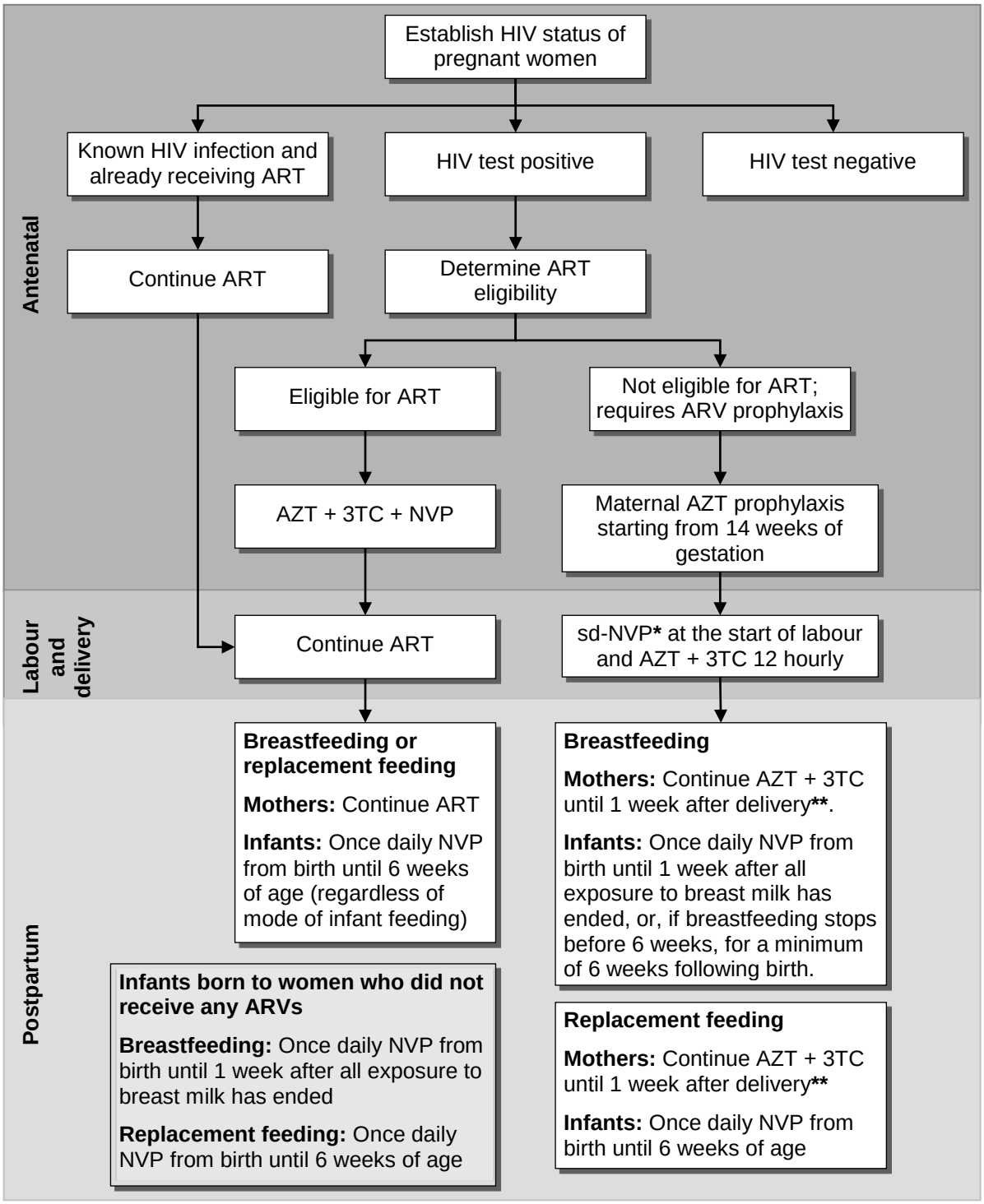
Table 3.4 depicts the most common types of invalid DBS specimens that HCWs should avoid.

Table 3.4: 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 ▪ 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. **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



* Omit sd-NVP and tail dose if the mother received AZT for more that 4 weeks during pregnancy.
** Omit postpartum AZT and 3TC if the mother did not receive sd-NVP during labour.

Source: World Health Organisation, Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants, 2010.

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: Advantages and Disadvantages of Infant Feeding Options for Mothers Living with HIV

Exclusive Breastfeeding

Advantages	Disadvantages
▪ Breast milk is the perfect food for infants and protects them from many diseases, especially diarrhoea and pneumonia and the risk of dying of these diseases. ▪ Breastfeeding improves brain growth and development. ▪ Breast milk gives infants all of the nutrition and water they need. They do not need any other liquid or food for the first 6 months. ▪ Breast milk is always available and does not need any special preparation. ▪ Breastfeeding provides the close contact that deepens the emotional relationship or bond between mother and child. ▪ Exclusive breastfeeding for the first few months may lower the risk of passing HIV, compared with mixed feeding. ▪ Many women breastfeed, so people will not ask the mother why she is doing it. ▪ Exclusive breastfeeding helps the mother recover from childbirth and protects her from getting pregnant again too soon.	▪ The risk of MTCT exists as long as the mother who is HIV infected breastfeeds, because breast milk contains HIV. ▪ The mother may be pressured to give water, other liquids or foods to the infant while breastfeeding. This practice, known as mixed feeding, may increase the risk of diarrhoea and other infections. ▪ The mother will need support to exclusively breastfeed until it is possible to use another feeding option. ▪ Exclusive breastfeeding requires feeding on demand at least 8–10 times per day, which working mothers may find difficult once they return to work if they lack adequate support (alternatively, they can privately express milk during the workday and can arrange to store milk in a cool place). ▪ If the mother becomes very sick, it may be difficult for her to breastfeed. ▪ Breastfeeding mothers require an additional 500 kcal/day to support exclusive breastfeeding during the infant's first 6 months. This is the equivalent of 1 extra meal a day.

Exclusive breastfeeding with early cessation (at 6 months or later)

Advantages	Disadvantages
▪ Early cessation ends the infant's exposure to HIV through breastfeeding. ▪	▪ Replacement feeding will require feeding the infant with a cup. Cup feeding requires caregiver patience and time. If possible, mothers should be taught how to feed infants using a cup and expressed breast milk, before they stop breastfeeding. ▪ Mothers' breasts may become engorged and infected during the transition period if some milk is not expressed and discarded.
Disadvantages	
▪ Infants may become malnourished after breastfeeding stops if suitable breast milk substitutes are unavailable or are provided inappropriately. ▪ Infants may be at increased risk of diarrhoea if breast milk substitutes are not prepared safely. ▪ Infants may become anxious and even dehydrated if they stop breastfeeding too rapidly.	

Commercial infant formula

Advantages	Disadvantages
▪ Commercial formula poses no risk of transmitting HIV to the infant. ▪ Commercial formula includes most of the nutrients that an infant needs. ▪ Other family members can help feed the infant.	▪ The mother may get pregnant again too soon. ▪ Safe preparation requires fuel and clean water (boiled vigorously for 1 to 2 seconds) to prepare the formula, and soap to wash the infant's cup. ▪ In some settings, family, neighbours, or friends may question a mother who does not breastfeed about her HIV status. ▪ Formula should be made fresh for each feed, according to directions, day and night, unless there is access to a refrigerator. ▪ A continuous, reliable formula supply is required to prevent malnutrition. ▪ The infant will need to drink from a cup. Babies can learn how to do this even when they are very young, but it may take time to learn.
Disadvantages	
▪ Commercial formula is expensive ▪ Commercial formula does not contain antibodies, which protect infants from infection. ▪ An infant who is fed commercial formula is more likely to get diarrhoea, chest infections, and malnutrition, especially if the formula is not prepared correctly. ▪ The mother must stop breastfeeding completely, or the risk of transmitting HIV will continue.	

Home-modified animal milk

Advantages	Disadvantages
▪ Home-modified animal milk presents no risk of HIV transmission. ▪ Home-modified animal milk may be less expensive than commercial formula and is readily available if the family has milk-producing animals. ▪ Mothers and caretakers already using commercial formula can use home-modified animal milk when commercial formula is not available. ▪ Other family members can help feed the infant if the mother is unable.	▪ The mother or caretaker will need to make fresh formula for each feeding, day and night, unless she has access to a refrigerator. ▪ The mother or caretaker must add sugar in the correct amount and dilute home-modified formula with clean water which has been boiled; this also requires fuel, which is expensive. ▪ The mother must stop breastfeeding completely, or the risk of transmitting HIV to her infant will continue. ▪ Families will need access to a regular supply of animal milk, sugar, multinutrient syrup, fuel for boiling water and soap for cleaning feeding cups and utensils used in preparing the formula. ▪ Cup feeding, which is recommended, may take time to learn. ▪ In some settings, a mother who does not breastfeed may be questioned about her HIV status by family, neighbours, or friends.
Disadvantages	
▪ Home-modified animal milk does not contain antibodies, which protect infants from other infections. ▪ An infant who is fed with home-modified animal milk exclusively is more likely to get diarrhoea and pneumonia and may become malnourished. ▪ Home-modified formula does not contain all of the nutrients and micronutrients that infants need. ▪ Formulas based on animal milks are more difficult for infants to digest than breast milk.	

APPENDIX 6-C: Steps to Express and Pasteurise Breast milk

How to Express Breast milk

- Get a container with a wide neck and a cover.
- Wash your hands and the milk container with soap and clean water.
- Sit or stand in a comfortable position in a quiet, private place. Drink something warm and try to relax as much as possible. You may ask someone to massage your back to help your milk to flow.
- Apply a warm compress to your breasts. Lightly massage them and gently
- Pull or roll your nipples.
- Put your thumb on the breast above the nipple and areola (the coloured area) and your first finger below the nipple and areola. Support your breast with your other fingers.
- Gently press your thumb and first finger together. Press and release, press and release, in order to start the milk flowing. This should not hurt. If it does, then you are not doing it right.
- Press the same way on the sides of the areola in order to empty all parts of the breast.
- Do not squeeze the nipple itself or rub your fingers along the skin. Your fingers should roll over the breast.
- Express one breast for 3-5 minutes until the flow slows, and then change to the other breast. Then do both breasts again.
- Change hands when the one hand gets tired. You can use either hand for either breast.
- Store the breast milk in a clean, covered container.
- You can store fresh breast milk for up to 8 hours at room temperature and up to 24 hours in a refrigerator.

Steps for pasteurising the milk

- Before pasteurising the milk, gather the following things:
  - o Clean containers with wide necks and covers, enough to store the milk
  - o A small pot to heat the milk, such as an enamel cup
  - o A large container of cool water
  - o Fuel to heat the water
  - o Soap and clean water to wash the equipment
  - o Follow these steps to pasteurise and store milk:
    1. Wash all of the pots, cups and containers with soap and water.
    2. Heat your milk **to the boiling point** and then place the small pot in a container of cool water so that it cools more quickly. If that is not possible, let the milk stand until it cools.
    3. Only boil enough expressed milk for one feed.
    4. Store it in a clean, covered container in a cool place and use it within 1 hour.
    5. Feed the infant using a cup. Throw away any unused milk.

APPENDIX 6-D: Preparing Home-Modified Animal Milk

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

A paper from WHO stated that: "Children fed with this formula [i.e., according to the recipes from WHO for home-modified animal milk] are likely to develop essential fatty acid deficiency, with dermatitis, growth retardation and impaired cognitive development as possible consequences." Given the nutritional inferiority of home-modified animal milk, WHO no longer recommends it for long-term use, but does recognizes that it *may be considered as a short-term option when commercial infant formula is temporarily unavailable*.

Home-modified animal milk is more complex to prepare and is nutritionally inferior to commercial infant formula.

Home modified animal milk is not recommended during the first six months of life. During the first six months of life, home-modified animal milk should only be considered as a short-term option when commercial infant formula is temporarily not available or affordable.

The milk fed to an infant 1 to 6 months old should be diluted and then fortified with sugar to increase the number of calories. The tables include recipes and instruction on the amount of milk needed for one feed. When possible, the infant should be given a daily micronutrient supplement because animal milks are relatively low in iron, zinc, Vitamin A, Vitamin C, and folic acid.

Counsel the mother to prepare home-modified animal milk hygienically. Instruct her to always wash her hands, work on a clean surface, use only washed and sterilized preparation and feeding equipment and to measure all ingredients carefully. Follow the guidelines in Chapter 6, Infant Feeding in the Context of HIV Infection, sections 6.7 and 6.8.

Cow or goat milk

Age of infant	Amount of milk	Amount of water	Amount of sugar	Amount of oil
1 month	40 ml	20 ml	4 g (approx. 1 level tsp.)	Mix one teaspoon of oil (preferably soy or another vegetable oil) into each day's feeds. The teaspoon could be divided between one or more feeds, but should be mixed into the milk, not given separately.
2 months	60 ml	30 ml	6 g (approx. 1 rounded tsp.)	
3–4 months	80 ml	40 ml	8 g (approx. 1 *heaping* tsp.)	
5–6 months	100 ml	50 ml	10 g (2 level tsp.)	
Directions: Put the water and milk together in a small pot and bring them to a rolling boil briefly (until big bubbles rise to the surface for 1 to 2 seconds). Add sugar and oil. As soon as this reaches the boiling point, remove the pot from the heat and stand it in a larger pot of cool water to cool.				

Full cream milk powder

Full cream milk powder is fresh cow's milk from which all water has been removed, leaving a dry milk powder. In this process, some vitamins such as vitamins C and B complex are lost. However, nutrients such as proteins, fats, carbohydrates, Vitamins A and D, and minerals are retained. If powdered full-cream milk is used instead of fresh milk, reconstitute according to the label and then modify reconstituted milk using the same recipe as for fresh milk.

Evaporated milk[a]

Evaporated milk is cow's milk that has been sterilised. The processing removes some of the water, fat content is also altered and vitamin C and foliate are destroyed. The recipes for preparing home-modified animal milk with evaporated milk follow.

Age of infant	Amount of milk	Amount of water	Amount of sugar	Amount of oil
1 month	16 ml	44 ml	4 g (approx. 1 level tsp.)	Mix one teaspoon of oil (preferably soy or another vegetable oil) into each day's feeds. The teaspoon could be divided between one or more feeds, but should be mixed into the milk, not given separately.
2 months	24 ml	66 ml	6 g (approx. 1 rounded tsp.)	
3–4 months	32 ml	88 ml	8 g (approx. 1 heaping tsp.)	
5–6 months	40 ml	110 ml	10 g (2 level tsp.)	

a. The dilution may vary according to the brand. Check the label for the appropriate dilution to prepare full-cream milk.

Directions: Put the water and milk together in a small pot and bring them to a rolling boil briefly (until big bubbles rise to the surface for 1 to 2 seconds). Add sugar and oil. As soon as this reaches the boiling point, remove the pot from the heat and stand it in a larger pot of cool water to cool.

Animal milk for the infant older than 6 months

- The baby older than 6 months should continue to have milk even after complementary foods have been introduced.
- Animal milk for a baby older than 6 months of age does not have to be diluted and does not need added sugar. All milks (except UHT milk that has been open less than one hour, evaporated milk open less than one hour and powdered full-cream milk prepared with boiled water) must be boiled before giving to a child less than 12 months of age. Raw milk — from any animal (e.g., cow, goat, camel, sheep or buffalo) — must be boiled before consumption by any individual of any age.
- Powdered or evaporated milk: add clean boiled water according to the directions on the tin to make full strength milk. Do not dilute the milk and do not add sugar.
- Children who are not breastfed should be given an iron-containing micronutrient supplement every day.
- Beginning at 6 months of age, additional foods should be added to the diet.

Average amount of milk needed per day

Age	Number of feeds per day	Amount of milk or formula per feed	Total milk or formula per day
Birth to <1 month	8	60 ml	480 ml
1 to <2 month	7	90 ml	630 ml
2 to <4 months	6	120 ml	720 ml
4 to <6 months	6	150 ml	900 ml

APPENDIX 6-E: How to Feed an Infant from a Cup

How to feed an infant with a cup

- Hold the infant sitting upright or semi-upright on your lap.
- Hold the cup of milk to the infant's lips.
- Tip the cup so that the milk just reaches the infant's lips and it rests lightly on the infant's lower lip.
- The infant will become alert and open mouth and eyes[a].
- **Do not pour** the milk into the infant's mouth. Hold the cup to the infant's lips and let the infant take it.
- When the infant has had enough, s/he will close the mouth. If the infant has not taken the calculated amount, s/he may take more next time or the mother needs to feed more often.
- Measure the infant's intake over a 24-hour period, not just at each feed, to calculate whether the infant is getting the right amount of milk.

[a] Low–birth weight infants will start to take milk with the tongue. A full-term or older infant will suck the milk, spilling some.

What you do…	Why you do it…
1. Get ready ▪ Wash hands with soap and water. ▪ Hold the infant close and comfortable. ▪ Pour small amount of prepared milk/formula in infant's cup.	▪ Any form of dirt or germs may give your infant diarrhoea. ▪ Close touching fosters bonding. ▪ Helps prevent spilling and contamination if infant doesn't finish the whole feeding.
2. Feed the infant  ▪ Put the cup to infant's lips. Don't tip the cup too much. ▪ Let the infant lap or suck the milk at his/her own rate. ▪ Keep the cup to infant's lips until s/he is ready to drink again. ▪ Encourage the infant to continue feeding as long as possible or until feed is finished.	▪ Too much formula may make the infant choke. ▪ Every infant is different and may take a little more or less at different feedings. ▪ Do not force feed the infant
3. Clean the utensils ▪ Wash used utensils with soap and clean water immediately after feeding. ▪ Look to see that there is no milk in the clean utensils.	▪ Milk/formula is sweet and germs grow more quickly. ▪ Contaminated utensils may make your infant sick. Follow directions for sterilising.

▪ Kill all germs by boiling utensils for 10 minutes or soaking in diluted household bleach followed by boiling to rinse bleach. ▪ Cover utensils and store in a dry place.	
Cup feeding is always to be used instead of bottle feeding.	
Be prepared 13. Use a reliable family planning method to prevent getting pregnant too soon. 14. Know how to give replacement fluids if your infant develops diarrhoea. 15. If you have a problem, consult your nurse/nutritionist for help.	

This appendix was adapted from the following:

WHO, UNICEF and USAID. 2005. HIV and Infant Feeding Counselling Tools: Reference Guide. Retrieved 28 October 2005 from http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_CT/ISBN_92_4_159301_6.pdf

WHO and UNAIDS. 2003. HIV and infant feeding: Guidelines for decision-makers, Retrieved 30 July 2004, from http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_DM.pdf

WHO and UNAIDS. 2003. HIV and infant feeding: Guidelines for healthcare managers and supervisors. Retrieved 30 July 2004, from http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_MS.pdf

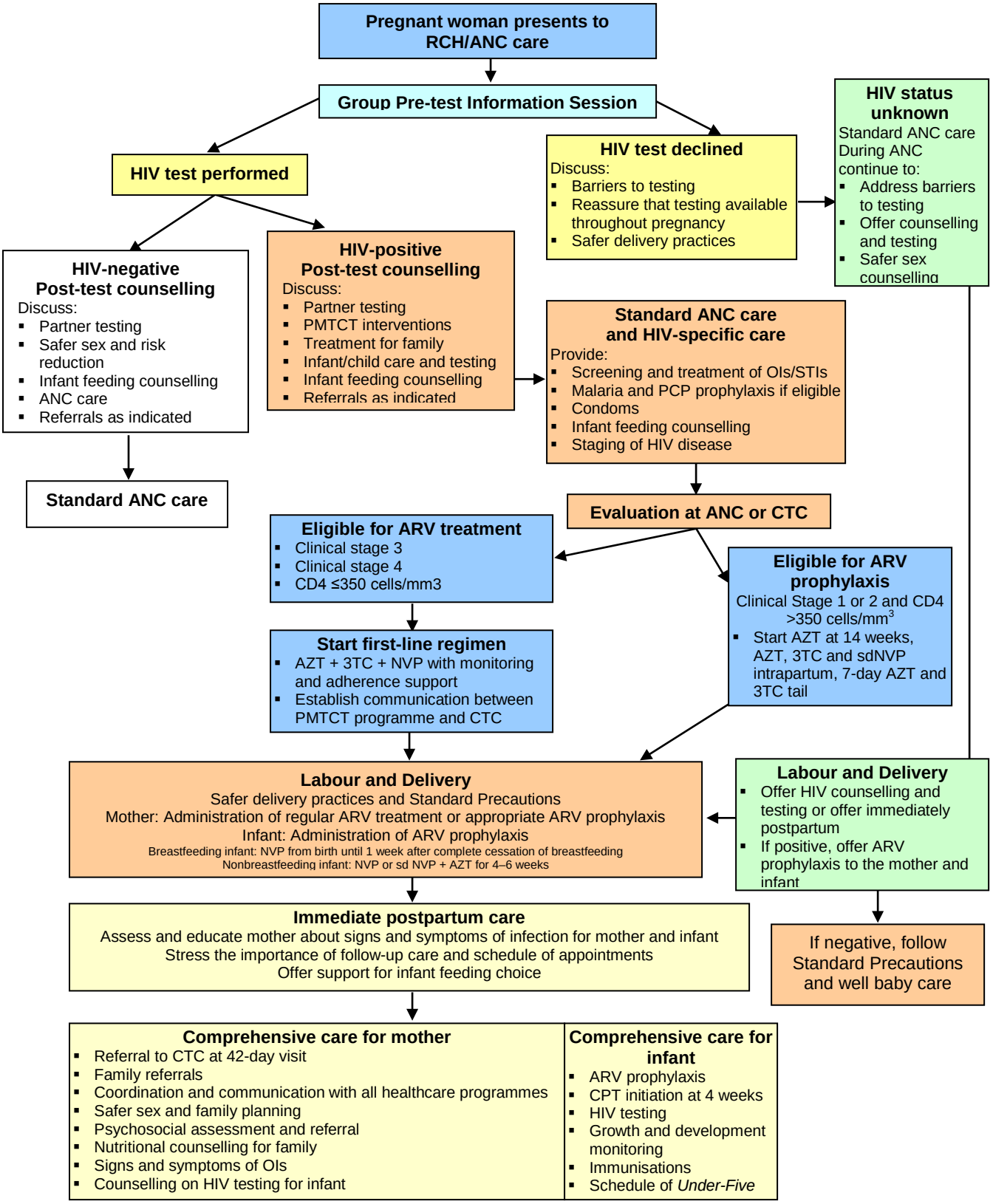
APPENDIX 6-F: Commercial Infant Formula Requirements

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

APPENDIX 7-A: Comprehensive Care for Prevention of Mother-to-Child Transmission of HIV



APPENDIX 7-B: Immunisation Recommendations and Schedule

All children who have been exposed to HIV should be fully immunised according to their age. Because most children who are HIV infected do not have severe immune suppression during the first year of life, immunisation should occur as early as possible after the appropriate age to optimise immune response.

Bacillus Calmette-Guérin (BCG). Children with known symptomatic HIV infection should not receive the BCG vaccine. However, because most infants who are HIV infected are asymptomatic at birth, when BCG immunization occurs, and thus will have unknown HIV status, the birth BCG immunisation should be given. If scarring does not occur at the site after 3 months and the child is symptomatic, revaccinate with BCG.

Oral polio vaccine (OPV). If the child has diarrhoea and is scheduled to receive OPV, the dose should be given as scheduled. However, the dose should not be recorded in the schedule, and an additional dose of OPV should be given after the diarrhoea has resolved or at the next routine visit.

Diphtheria, pertussis, tetanus (DPT). Children who have either recurrent convulsions or active central nervous system disease or who have had shock or convulsions within 3 days of receiving a DPT vaccination should not receive subsequent DPT vaccination.

Hepatitis B vaccine. The World Health Organisation recommends that the hepatitis B vaccine be included in routine childhood immunisation schedules for all children. In Tanzania the combined DPT-hepatitis B vaccine is administered.

Measles. The measles vaccine can be safely given to HIV-exposed infants or HIV-infected infants at 9 months of age IF they are asymptomatic. Infants who are severely immunocompromised should not receive this live vaccine.

Age of Infant	Vaccine
Birth	BCG[a], OPV-0
4 weeks	DPT-HBV-1,OPV-1
8 weeks	DPT-HBV-2, OPV-2
12 weeks	DPT-HBV-3, OPV-3
9 months	Measles* (if no severe immunodeficiency)
Key: BCG = Bacillus Calmette-Guérin; OPV = oral polio vaccine; DPT-HBV = combined diphtheria, pertussis, tetanus and hepatitis B vaccine.	
[a.] BCG and measles vaccine should be given to **all children** *except* those children with symptoms of advanced HIV and AIDS.	

Source: Adapted from *WHO guidance on routine immunization for children*. http://www.who.int/immunization/policy/immunization_tables/en/index.html

APPENDIX 7-C: Vitamin A Supplementation

Studies show vitamin A reduces illness and death in children and adults. All mothers and children should receive vitamin A supplementation.

Protocol for vitamin A supplementation

After delivery, all mothers receive 200,000 IU.

Infants

Age	Dose: *Breastfed* infants	Dose: *Formula fed* infants
<6 months	None	50,000 IU
At 9–12[a] months	100,000 IU	100,000 IU
At 15–18 months	200,000 IU	200,000 IU
At 21–24 months	200,000 IU	200,000 IU

[a.] Timing should correspond with measles vaccination.

APPENDIX 7-D: Paediatric Developmental Assessment Tool

Developmental Milestones Monitoring for ART Clinics
3 Months – 9 Months

Name of child:_____ **Date of birth:**_____ **File no:**_____

Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
3 months **Date:**	**Supine:** ☐ Pull to sit: 45˚ head lag still present **Sitting:** Propped up ☐ Flexed/C -position ☐ Hold head steady **Prone:** ☐ Bears weight on flexed arms ☐ Lifts head 45˚and turn head to side	**Eyes:** ☐ Follows through 90° in lying ☐ Discover hands **Hands:** ☐ Open for longer ☐ Shake a rattle when it is placed in the hand (not intentional) ☐ Mouthing begins	☐ Coos and chuckles ☐ Identifies familiar voices ☐ Make noises and smile when spoken to ☐ Cries less ☐ Turn head towards sound	☐ Excited when fed, look at mother's face ☐ Smiles selectively **Independence:** ☐ Better routine **Play:** ☐ Brief interest in toys and sounds ☐ Plays with own body	☐ No visual fixation or following ☐ Asymmetry of tone or movement ☐ Floppy/stiff ☐ consistent fisting ☐ Unable to turn or lift head ☐ Failure to smile ☐ Poor sucking and swallowing ☐ Poor hearing
	Comments:			**Signature:**	
6 months **Date:**	**Supine:** ☐ Pull to sit, no more head lag ☐ Plays with feet ☐ Rolls from back to tummy **Sitting:** Unaided ☐ Sit, supported by arms **Standing:** ☐ Bears weight on legs, equal both sides **Prone:** ☐ Props self on straight arms, legs extended, toes turned outwards	**Eyes:** ☐ Follows through 180˚ in lying ☐ Focus on small objects **Hands:** ☐ Hands to midline ☐ Banging blocks against the table ☐ Reaches and attains object at will ☐ Hold and actively plays with rattle	☐ Babbles to get attention ☐ Makes simple sounds ☐ Laughs aloud ☐ Turns to mother's voice ☐ Responds to his name	☐ Holds out arms to be picked up ☐ Examines the face of the person holding him **Independence:** ☐ Start eating solid food off a spoon ☐ Starts to hold the bottle **Play:** ☐ Puts everything in mouth	☐ Floppiness ☐ No head control ☐ Failure to use both hands ☐ Asymmetrical movements ☐ Squint ☐ Failure to turn to sound ☐ Poor response to people ☐ Poor hearing
	Comments:			**Signature:**	
9 months **Date:**	**Sitting:** ☐ Sits without support ☐ Lean forward and sit up again without losing balance **Standing:** ☐ Remain standing for a few seconds by holding onto an object, falls down again **Prone:** ☐ Baby start to crawl	**Eyes:** ☐ Extremely accurate vision **Hands:** ☐ Can pick up an button ☐ Holds a block in each hand ☐ Points	☐ Babbles "ma-ma" ☐ Imitates sounds ☐ Understands "no" / "bye-bye"	☐ Stranger anxiety **Independence:** ☐ Dependent on mother ☐ Holds bottle independently **Play:** ☐ Enjoys playing "peek- a-boo"	☐ Unable to sit ☐ Failure to use both hands ☐ Fisting ☐ Squint ☐ Persistence of primitive reflexes ☐ Poor hearing
	Comments:			**Signature:**	

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:**_____

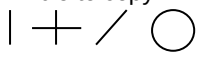
Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
24 months (2 years) **Date:**_____	☐ Take few steps backwards ☐ Runs and change direction easily ☐ Jump off step with 2 feet together ☐ Stand and kick a ball ☐ Able to throw a ball	☐ Page through a book page by page ☐ Obvious hand 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:**_____

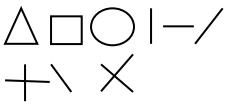
Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
48 months (4 years) **Date:**	☐ Walk heel-toe with good balance ☐ Walk on tip toe ☐ Stands on 1 leg for 3seconds ☐ Hop on 1 leg ☐ Jump with 2 feet together forward ☐ Can catch and throw a ball ☐ Catch a bouncing ball direct	☐ Draw-a-man: 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:**_____

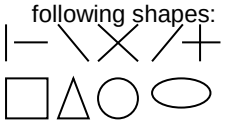
Age	Gross motor	Fine motor	Communication	Personal / social	Warning signs
60 months (5 years) **Date:** _____	☐ Stand on 1 leg (8-10 seconds) ☐ Walk heel-toe with good balance ☐ Walk on tiptoe ☐ Hop on one leg (3times) ☐ Jump with 2 feet together ☐ Able to march ☐ Able to catch and throw a ball ☐ Catch 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
	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-E: 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 15%
- 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 (See Appendix 9-P).

APPENDIX 7-F: WHO Clinical Staging of HIV and AIDS for Adults and Adolescents with Confirmed HIV Infection[a]

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[b] 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 10^9 per litre) and/or chronic thrombocytopaenia (<50 x 10^9 per litre)

Clinical Stage 4[c]

- HIV wasting syndrome
- Pneumocystis pneumonia
- Recurrent severe presumed bacterial pneumonia
- 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

a. 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

a. Unexplained refers to where the condition is not explained by other causes.

b. 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).

APPENDIX 7-G: WHO Clinical Staging of HIV/AIDS for Children with Confirmed HIV Infection[a]

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[b]
- 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[c]

- Unexplained[a] 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)

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

a. 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

a. Unexplained refers to where the condition is not explained by other causes.

b. 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).

APPENDIX 7-H: ARV Medications for Adults and Children in Tanzania

First-line ARV treatment regimens for adults and adolescents

Zidovudine (AZT) 300 mg/Lamivudine (3TC) 150 mg twice daily and Efavirenz (EFV) 600 mg once daily at night

The AZT + 3TC + EFV combination is the default combination to be prescribed to all patients if there is no contraindication. However, for women of childbearing age, Nevirapine (NVP) 200 mg twice a day is given instead of Efavirenz. In adults, NVP should be initiated at 200 mg once per day for 14 days, then increased to 200 mg twice per day. The low-dose initial therapy reduces the risk of rash.

Note:

- For young adolescents, the dose of AZT is 200 mg BD for a body weight of between 20kgs and 25 kgs
- For patients weighing <40kg, the dose of EFV should be <600 mg.
- Efavirenz has been reported to be associated with teratogenicity in early pregnancy
- In women for whom effective contraception can be assured, EFV remains a viable option for the NNRTI component of the regimen.

The AZT + 3TC + EFV combination is the default combination to be prescribed to all patients if there is no contraindication. In the event of toxicity that requires a change in ARV treatment, it is generally recommended that only the toxic drug(s) should be replaced, if possible. The table below provides guidance on ARV drug combinations with some common toxicity switches. It is based on the first line medicines in the National ARV program:

First Line	Problem	Substitution
AZT + 3TC + NVP or EFV*	Anaemia due to AZT	D4T + 3TC + NVP or EFV* TDF*** + FTC +NVP or EFV TDF*** + 3TC + NVP or EFV
D4T +3TC + NVP	Hypersensitivity due to NVP	D4T + 3TC + EFV*
D4T + 3TC + NVP or EFV*	Severe peripheral neuropathy due to d4T	AZT + 3TC + NVP or EFV* TDF*** + FTC + NVP or EFV TDF*** + 3TC + NVP or EFV
D4T + 3TC +NVP or EFV*	Intolerant of NVP and EFV	D4T + 3TC + LPV/RTV** TDF*** + FTC + LPV/RTV**
TDF containing regimen	Nephrotoxicity due to TDF	Replace with AZT or d4T

*Only if the patient is older than 3 years of age or is a woman with no risk of pregnancy
**Follow liver function tests (LFTs) closely
***Follow renal functions closely

Second-line ARV treatment regimen for adults and adolescents

The second-line NRTI choice for adults and adolescents depends on the first-line regimen. For patients on first-line AZT or d4T,, the default second-line option is to use is TDF plus 3TC or FTC combined with a ritonavir-boosted PI, either LPV/r or ATV/r (TDF+3TC or FTC + LPV/r or ATV/r).

For patients initiated on first-line TDF because of intolerance to AZT and d4T, the default second-line option is to use ABC plus ddI combined with a ritonavir-boosted PI, either LPV/r or ATV/r. (ABC + ddI + LPV/r or ATV/r).

Note that LPV/r , TDF/3TC and TDF/FTC are currently available as fixed dose combination (FDC) formulations, which simplify dosing and administration.

First-line ARV treatment regimens for children

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
- Abacavir (ABC) + Lamivudine (3TC) + Efavirenz (EFV) for children ≥3 years or Nevirapine (NVP) for children <3 years
- Stavudine (d4T) + 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.

Adapted from the following source: *The United Republic of Tanzania Ministry of Health, National AIDS Control Programme (NACP)* Third edition, February 2009 National Guidelines for the Management of HIV and AIDS.

APPENDIX 7-I: Information about Antiretroviral Medications

Classification of ARV Medications

Full name	ARVs used nationally	How they work
Nucleoside/nucleotide reverse transcriptase inhibitors (NRTI) Also called "nukes"	Abacavir (ABC) Didanosine (ddI) Emtricitabine (FTC) Lamivudine (3TC) Stavudine (d4T) Tenofovir (TDF) Zidovudine (AZT)	▪ These medications stop HIV from copying itself by blocking the reverse transcriptase enzyme. ▪ This enzyme changes HIV's genetic material (RNA) into a form of DNA. ▪ These medications mimic the building blocks used by reverse transcriptase to make copies of the HIV genetic material. These false building blocks disrupt the copying so the virus can't reproduce.
Non-nucleoside reverse transcriptase inhibitors (NNRTI) Also known as "non-nukes"	Efavirenz (EFV) Nevirapine (NVP)	▪ These medications also target the reverse transcriptase enzyme but instead of mimicking the enzyme, they physically prevent reverse transcriptase from working.
Protease Inhibitors (PIs)	Lopinavir/ritonavir (LPV/r) Saquinavir (SQV) Ritonavir (RTV)	▪ These medications block the protease enzyme. ▪ When protease is blocked, the new viral particles cannot mature.

Adapted from: New Mexico AIDS Education and Training Center Fact sheets 430, 410, 440, and 460, downloaded July 25, 2006 from http://aidsinfonet.org/factsheets.php

Side Effects Management

Drug	Very common side effects: *Warn patients about side effects before they occur and suggest ways they can manage the side effects*	Potentially serious side effects and adverse events: *Educate patients on how to recognise side effect and what to do*
Abacavir (ABC)	▪ Nausea ▪ Diarrhoea ▪ Headache, ▪ Loss of appetite, tiredness	Seek care urgently at CTC for: ▪ Fever ▪ Rash ▪ Severe nausea and vomiting ▪ Difficulty breathing

		Seek advice soon for: ▪ Changes in fat distribution (associated with long-term use) o Arms, legs, buttocks, and cheeks become thin o Breasts, belly, and back of neck become fat
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) o Arms, legs, buttocks, and cheeks become thin o 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) o Arms, legs, buttocks, and cheeks become thin o 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: o Jaundice/yellow eyes o Severe nausea and fatigue
Tenofovir (TDF)	▪ Nausea ▪ Vomiting ▪ Diarrhoea ▪ Dizziness	
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 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 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 8-A: Safe Disposal of Infectious Waste Materials

Proper waste management is essential to protecting people who handle waste items from injury and preventing the spread of infection to HCWs and to the local community. Staff working in PMTCT sites are responsible for segregating waste properly.

The 5 steps of proper waste management are:

1. Segregation or separation of waste according to colour coding
2. Handling and storage (collection, weighing and storage)
3. Transport, both on-site and off-site
4. Treatment or destruction of materials by autoclave, lime, chemicals or incineration
5. Disposal (burning, burying, placenta pits and encapsulation)

The following lists the national recommended colour coding for waste disposal:

Colour of the container	Type of waste
Yellow	Safety box (puncture-resistant) for sharps: ▪ Needles ▪ Syringes ▪ Blades ▪ Broken glass ▪ Lancets ▪ Scissors ▪ Ampoules ▪ Slides and slide covers
Red	Wet, infectious materials: ▪ Blood ▪ Body tissues (amputations) ▪ Body fluids (discharges) and specimens (stool and sputum) ▪ Placentas ▪ Wet dressings ▪ Catheters ▪ Blood infusion bags
Blue/Black	Non-infectious materials: ▪ Office papers ▪ Pharmaceutical packaging ▪ Plastic bottles (including water bottles) ▪ Food remains ▪ Waste paper ▪ Trash

APPENDIX 8-B: Preparing Chlorine Solutions for Decontamination

General guidelines

- Keep concentrated solutions in a cool place; avoid contact with light.
- Do not incinerate chlorine or mix chlorine with acid.
- Use very clean water (boiled and filtered) when making solutions.
- Do not store diluted chlorine.

Formula for making a dilute solution from a concentrated solution

$$\textit{Total Parts (TP) water} = \left[\frac{\textit{\% Concentrate}}{\textit{\% Dilute}}\right] - 1$$

Example A. To make a 0.5% active chlorine solution from a concentrated liquid solution of 3.5% active chlorine, use the following formula:

$$\text{Total parts water} = \left[\frac{3.5\%}{0.5\%}\right] - 1 = 6$$

Mix 1 part (volume) of chlorine with 6 parts (volume) of water for a ratio of 1:6. For example, mix 100 mL of concentrated chlorine with 600 mL of water.

Example B. To make a dilute solution of 0.1% from 5% concentrated solution:

$$\text{Total parts water} = \left[\frac{5.0\%}{0.1\%}\right] - 1 = 50 - 1 = 49$$

Take 1 part concentrated solution and add to 49 parts water.

Formula for making a dilute chlorine solution from a dry powder of any percent available chlorine

$$\text{Grams/litre} = \left[\frac{\%\ \text{Dilute}}{\%\ \text{Concentrate}}\right] \times 1000$$

Example. To make a dilute chlorine solution (0.5%) from a concentrated powder (35% available chlorine):

$$\text{Calculate grams/litre} = \left[\frac{0.5\%}{35\%}\right] \times 1000 = 0.0142 \times 1000 = 14.2\text{g/L}$$

Add 14.2 g (approximately 14 g) to 1 litre of water *to get a solution that is 0.5% chlorine*.

The available chlorine from dry powder is as follows:

- Calcium hypochlorite: 70% available chlorine
- Calcium Hypochlorite: 35% available chlorine
- Sodium dichloroisocyanurate (NaDCC): 60% available chlorine
- Chloramine tablets: 1 g of available chlorine per tablet; to make a solution of 0.5% chlorine, dissolve 20 tablets/litre

APPENDIX 8-C: Steps in High-level Disinfection

High-level Disinfection (HLD)

HLD is the process that destroys all microorganisms (including bacteria, viruses, fungi and tuberculosis), but does **not** reliably kill all bacterial endospores, which cause diseases such as tetanus and gas gangrene. HLD is suitable for instruments and items that come in contact with skin or mucous membranes.

Sterilisation, which kills all microorganisms, including bacterial endospores, is preferable to HLD for instruments and other items that will come in contact with the bloodstream or tissues under the skin. If sterilisation is not available, HLD is the only acceptable alternative.
HLD can be performed by boiling, soaking in chemicals or steaming.

HLD by boiling

Step 1

- Decontaminate and clean all items to be boiled.
- Open all hinged items and disassemble those with sliding or multiple parts.
- Completely submerge all items in the water in the pot or boiler (with at least 2.5 cm of water above the instrument).
- Place any bowls and containers upright, not upside-down, and fill with water.
- For the items that float it is not necessary that they be fully covered by the water, but do not forget to cover the pot with a lid.

Step 2
Cover the pot or close the lid on the boiler and bring the water to a gentle, rolling boil.

Step 3
When the water comes to a rolling boil, start timing for 20 minutes. Use a timer to make sure to record the time that boiling begins. From this point on, do not add or remove any water and do not add any items to the pot or boiler.

Step 4
Lower the heat to keep the water at a gentle, rolling boil. If the water boils too vigorously, it will evaporate, and the items may become damaged if they bounce around the container and hit the side walls and other items being boiled. Lower heat also saves fuel or electricity.

Step 5
After 20 minutes, remove the items using dry tools that have been disinfected by HLD (i.e., lifters, Cheatle forceps). Never leave the instruments in the pot. Place the items on an HLD tray or in an HLD container with a tight fitting cover away from insects and dust.

An HLD tray or container can be prepared by boiling it for 20 minutes or by filling it with a 0.5% chlorine solution and letting it soak for 20 minutes, then draining the chlorine solution and rinsing thoroughly with sterile water.

Step 6
Allow air drying before use or storage.

Step 7
Use items immediately or keep them in a covered, sterile or HLD container for up to 24 hours.

Never leave boiled items in water that has stopped boiling; they can become contaminated as the water cools.

HLD by chemicals

Step 1
Decontaminate, clean, and thoroughly dry all instruments and other items to be processed. Water from wet items will dilute the chemical solution, thereby reducing its effectiveness.

Step 2
When using glutaraldehyde solution: Prepare the solution according to the manufacturer's instructions. Ideally, an indicator strip should be used each time the solution is used to determine if the solution is still effective. After preparing the solution, place in a clean container with a lid. Mark the container with the date the solution was prepared and the date it expires. Glutaraldehyde solution is toxic and an irritant; it must be used with a fume hood or in well-ventilated areas.

When using a chlorine solution: Prepare 0.5% chlorine solution as described in Appendix B. Fresh solution should be made each day or more often if the solution becomes cloudy. Put the solution in a clean container with a lid.

Step 3
Open all hinged items and disassemble those with sliding or multiple parts. The solution must contact all surfaces in order for HLD to be achieved. Completely submerge all items in the solution. All parts of the items should be under the surface of the solution. Place any bowls and containers upright, not upside-down, and fill with the solution.

Step 4
Cover the container, and allow the items to soak for 20 minutes. Do not add or remove any instruments or other items once timing has begun.

Step 5
Remove the items from the solution using dry tools that have been disinfected by HLD (i.e., lifters, Cheatle forceps).

Step 6
Rinse thoroughly (3 times or more) with sterile water to remove the any chemical residue. This residue is toxic to skin and tissue.

Step 7
Place the items on an HLD tray or in a HLD container and allow to air dry before use or storage. Use items immediately or keep in a covered, dry HLD container and use within 24 hours.

A HLD tray or container can be prepared by boiling it for 20 minutes or by filling it with a 0.5% chlorine solution and letting it soak for 20 minutes, then draining the chlorine solution and rinsing thoroughly with boiled water.

APPENDIX 8-D: Types of Sterilisation Techniques

Sterilisation eliminates all microorganisms (bacteria, viruses, fungi and parasites), including bacterial endospores, from instruments and other items. Sterilisation is recommended for instruments and other items that will come in contact with the bloodstream or tissues under the skin, as well as on draped and some surgical attire.

Sterilisation can be performed using:

- High pressure steam (autoclaving)
- Dry heat (oven)
- Soaking in chemicals (cold sterilisation)
- Gamma radiation

Heat (autoclaving/steam and dry heat) is the most effective method of sterilisation and is reliable if monitored carefully. It is also cheaper than chemical methods. It should be considered first for all medical equipment that can withstand heat.

Chemical sterilisation is the alternative method when heat cannot be used (e.g., ethylene oxide and glutaraldehyde).

Sterilisation by Heat

Remember: Exposure time begins when the steriliser has reached the target temperature. Do not overload the steriliser. Leave at least 7.5 cm between items and walls of steriliser.

A. Dry Heat

Time/Temperature:	1 hour at 170oC (340oF) and then cooling. Total cycle time is 2 to 2.5 hours.
	2 hours at 160oC (320oF) and then cooling. Total cycle time is 3 to 3.5 hours.
	2.5 hours at 150oC (300oF)
	3 hours at 140oC (285oF)

B. Steam Heat

Time:	20 minutes (or 30 minutes if items are wrapped)
Temperature:	121ºC (250oF)
Pressure:	106 K Pa (15 Ibs/sq inch)

Allow all items to dry before removing from the steriliser.

Sterilisation by Chemicals (Cold Sterilisation)

Some high-level disinfectants will kill endospores after prolonged (10–24 hour) exposure and can therefore be used for sterilisation.

Chemical sterilisation is used for instruments and other items that are heat-sensitive or when heat sterilisation is not available.

Follow the manufacturer's instructions regarding the time necessary for sterilisation to be achieved. In general, if the solution contains glutaraldehyde, cover the container, and allow the instruments and other items to soak for 8 to 10 hours. Do not add or remove any instruments or other items once time has begun.

Remove the instruments and other items from the solution using dry tools that have been disinfected by HLD (i.e., lifters, Cheatle forceps).

Rinse thoroughly with **sterile** water to remove the residue that chemical sterilants leave on instruments and other items; this residue to toxic to skin and tissues. Note that because boiling and steaming does not reliably inactivate all endospores, rinsing with boiled water can contaminate sterile instruments.

Storage: Place the instruments and other items on a sterile tray or in a sterile container and allow air-drying before use or storage. Use the instruments and other items immediately or keep in a covered, dry, sterile container and use within 1 week.

APPENDIX 8-E: Hepatitis B Immunisation and Post-exposure Prophylaxis

Immunisation

Immunisation of all HCWs against infection with hepatitis B (HBV) should be routine. HBV is more prevalent and more infectious than HIV. Long-term consequences of HBV infection include cirrhosis and hepatocellular carcinoma. HBV vaccines are cost effective and widely available.

It is unnecessary to check whether an HCW is immune to hepatitis B before giving the immunisation.

A standard 3-month course is recommended for immunization.

- Dose #1
- Dose #2 is given 1 month later
- Dose #3 is given 6 months after dose #1

If possible, measure antibodies to hepatitis B 2 to 6 months after the last dose (dose #3) to determine whether the HCW has developed immunity to HBV (i.e., whether the HCW is a good responder to hepatitis B vaccine). An anti-HBs serologic level of ≥10 mlU/mL indicates immunity. An anti-HBs serologic level of <10 mlU/mL is a negative serologic test and means that the HCW is a nonresponder.

Occupational Exposure Management

In case of occupational exposure to hepatitis B virus, prophylaxis is indicated for those HCWs who are susceptible (defined as having a negative HbsAG or negative hepatitis B surface antigen and no history of receiving immune serum globulin).

Steps for managing occupational exposure to HBV:

1. Give tetanus immunisation if it has not been given within the last 10 years.
2. Assess the risk of exposure to HBV.
3. Determine the immune status of the source person and the exposed person.
4. Collect a specimen from the source person for HBsAGg, to see there if there is active HBV.
5. If testing is not possible, base the determination on clinical history (jaundice, hepatitis of any viral strain, and previous immunisation status).
6. Give hepatitis B immune globulin (HBIG (5 ml by IM injection) as soon as possible but within 7 days of exposure (5 mL by IM injection).
7. Give dose #1 of hepatitis B vaccine, which should be repeated according to the standard 3-month course.
8. If dose #1 of hepatitis B vaccine is not available, repeat HBIG 1 month after first dose.

APPENDIX 9-A: PMTCT ANC Register (Rejesta ya Wajawazito)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Tarehe ya kuanza Kliniki (tr/mw/mk)	Namba ya kadi ya kliniki ya mama mjamzito ; Ongeza kifupisho cha Kituo iwapo amepewa Rufaa	Mahali anapoishi (Kijiji / Kitongoji / Mtaa)	Umri wa Mimba (Wiki)	Hali ya Maambukizi ya VVU kabla ya kuanza kliniki	Tarehe ya unasihi Kabla ya Kupima VVU (tr/mw/mk)	Tarehe ya kipimo cha 1 cha VVU (tr/mw/mk)	Majibu ya Kipimo cha 1 cha VVU	Tarehe ya unasihi baada ya Kipimo cha 1 cha VVU (tr/mw/mk)	Tarehe ya Mwenza Kupima VVU – Kliniki ya Wajawazito (tr/mw/mk)	Majibu ya Kipimo cha Mwenza cha VVU – Kliniki ya Wajawazito	Unasihi kwa mwenza baada ya kupima VVU	Mama Mjamzito na Mwenza wamepima VVU Pamoja	Tarehe ya kipimo cha 2 cha VVU (tr/mw/mk) kwa mama mjamzito	Majibu ya Kipimo cha 2 cha VVU kwa mama mjamzito	Tarehe ya unasihi baada ya Kipimo cha 2 cha VVU (tr/mw/mk) Kwa mama mjamzito	Maoni
					WEKA VEMA IWAPO TAREHE NI SAWA NA TAREHE ALIYOANZA KLINIKI YA WAJAWAZITO (SAFU YA 1)											
				P N U			P N U			P N U	P N U	N H	N H	P N U		
				P N U			P N U			P N U	P N U	N H	N H	P N U		
				P N U			P N U			P N U	P N U	N H	N H	P N U		
				P N U			P N U			P N U	P N U	N H	N H	P N U		
				P N U			P N U			P N U	P N U	N H	N H	P N U		
				P N U			P N U			P N U	P N U	N H	N H	P N U		
				P N U			P N U			P N U	P N U	N H	N H	P N U		
				P N U			P N U			P N U	P N U	N H	N H	P N U		
				P N U			P N U			P N U	P N U	N H	N H	P N U		

APPENDIX 9-B: PMTCT Labour and Delivery Register (Rejesta Ya Uzazi [Uchungu Na Kujifungua] L&D)

(1)	(2)	(3)			(4)			(5)			(6)				(7)					(8)		(9)		(10)		(11)		(12)
																				Mtoto aliyezaliwa na mama mwenye VVU								
Tarehe ya Kujifungua (Tr/Mw/Mk)	Namba ya Kadi ya kliniki	Hali ya Maambukizi ya VVU toka Kliniki(ANC)			Matokeo ya Kipimo cha VVU wakati wa Uchungu			Matokeo ya Kipimo cha VVU wakati baada ya Kujifungua			Dawa za ARV alizomeza mama wakati wa Ujauzito (Kliniki ANC)				Dawa za ARV alizomeza mama wakati wa Uchungu/baada ya kujifungua					Hali ya Mtoto aliyezaliwa wakati wa kuruhusiwa chumba cha uchungu na kujifungua VVU H=Hai M=Mfu		Ulishaji wa Mtoto		Muda wa kutumia Dawa ya NVP Syrup kwa Mtoto		Rufaa na Unganisho kwenda CTC N=Ndiyo H=Hapana		Maoni
											AZT		ART		7A	7B	7C	7D	7E					NVP				
		P	N	U	P	N	U	P	N	U	<4 wks	≥4 wks	ART	Hakumeza	AZT + 3TC	NVP + AZT + 3TC	ART	Tail	Hakumeza	H	M	EBF	RF	6 wks	>6 wks	N	H	
		P	N	U	P	N	U	P	N	U	<4 wks	≥4 wks	ART	Hakumeza	AZT + 3TC	NVP + AZT + 3TC	ART	Tail	Hakumeza	H	M	EBF	RF	6 wks	>6 wks	N	H	
		P	N	U	P	N	U	P	N	U	<4 wks	≥4 wks	ART	Hakumeza	AZT + 3TC	NVP + AZT + 3TC	ART	Tail	Hakumeza	H	M	EBF	RF	6 wks	>6 wks	N	H	
		P	N	U	P	N	U	P	N	U	<4 wks	≥4 wks	ART	Hakumeza	AZT + 3TC	NVP + AZT + 3TC	ART	Tail	Hakumeza	H	M	EBF	RF	6 wks	>6 wks	N	H	
		P	N	U	P	N	U	P	N	U	<4 wks	≥4 wks	ART	Hakumeza	AZT + 3TC	NVP + AZT + 3TC	ART	Tail	Hakumeza	H	M	EBF	RF	6 wks	>6 wks	N	H	

APPENDIX 9-C: National PMTCT Care Register (Rejesta ya huduma ya ufuatiliaji wa mama mjamzito mwenye VVU)

HUDHURIO LA KWANZA																HUDHURIO LA PILI						HUDHURIO LA TATU						HUDHURIO LA NNE						HUDHURIO LA TANO						HUDHURIO LA SITA						HUDHURIO LA SABA						HUDHURIO LA NANE						
1	2	3	4	5	6	7		8	9	10	11	12	13	14	15	16	17	18	19	20		21	22	23	24	25		26	27	28	29	30		31	32	33	34	35		36	37	38	39	40		41	42	43	44	45		46	47	48	49	50		51
Namba	Tarehe ya kuandikishwa au kuhamia	Namba ya Kadi ya Kliniki ya mama mjamzito (RCH4)	Umri wa mama (Miaka)	Umri wa mimba (wiki)	Unasihi na uchaguzi wa ulishaji wa mtoto	Dawa za ARV alizopewa/anazotumia wakati wa Kliniki Ujauzito na Tarehe		Kuweka wazi hali yake ya maambukizi ya VVU na Tarehe	Matokeo ya dodoso la kifua kikuu TB/Tarehe: 1. Ana dalili, 2. Hana dalili	Tarehe ya kuanza CTX	Hatua ya sasa ya ugonjwa (WHO clinical staging)/ Tarehe	Kiwango cha CD4 /Tarehe	Vigezo vya kuanza matibabu: 1. Dalili (Clinical), 2. Idadi ya CD4	Amepewa rufaa kwenda: 1. (CTC), 2. (HBC), 3. (HLF), 4. Kwingineko (taja kwenye kisanduku cha chini)	Namba maalum ya utambulisho ya huduma ya CTC/Tarehe	Hatua ya Sasa ya Ugonjwa (WHO clinical staging) na Tarehe	Ufuatiliaji tiba kwa usahihi (Adherance)	Unasihi wa ulishaji wa mtoto	Amepewa rufaa kwenda: 1. (CTC), 2. (HBC), 3. (HLF), 4. Kwingineko (taja kwenye kisanduku cha chini)	Dawa za ARV za Nyongeza (Refill) na Tarehe		Hatua ya sasa ya ugonjwa/ Tarehe	Ufuatiliaji tiba kwa usahihi (Adherance) (hesabu vidonge na jazia)	Unasihi wa ulishaji wa mtoto	Amepewa rufaa kwenda: 1. (CTC), 2. (HBC), 3. (HLF), 4. Kwingineko (taja kwenye kisanduku cha chini)	Dawa za ARV za Nyongeza (Refill) na Tarehe		Hatua ya sasa ya ugonjwa/ Tarehe	Ufuatiliaji tiba kwa usahihi (Adherance) (hesabu vidonge na jazia)	Unasihi wa ulishaji wa mtoto	Amepewa rufaa kwenda: 1. (CTC), 2. (HBC), 3. (HLF), 4. Kwingineko (taja kwenye kisanduku cha chini)	Dawa za ARV za Nyongeza (Refill) / Tarehe		Hatua ya sasa ya ugonjwa/ Tarehe	Ufuatiliaji tiba kwa usahihi (Adherance) (hesabu vidonge na jazia)	Unasihi wa ulishaji wa mtoto	Amepewa rufaa kwenda: 1. (CTC), 2. (HBC), 3. (HLF), 4. Kwingineko (taja kwenye kisanduku cha chini)	Dawa za ARV za Nyongeza (Refill) / Tarehe		Hatua ya sasa ya ugonjwa/ Tarehe	Ufuatiliaji tiba kwa usahihi (Adherance) (hesabu vidonge na jazia)	Unasihi wa ulishaji wa mtoto	Amepewa rufaa kwenda: 1. (CTC), 2. (HBC), 3. (HLF), 4. Kwingineko (taja kwenye kisanduku cha chini)	Dawa za ARV za Nyongeza (Refill) / Tarehe		Hatua ya sasa ya ugonjwa/ Tarehe	Ufuatiliaji tiba kwa usahihi (Adherance) (hesabu vidonge na jazia)	Unasihi wa ulishaji wa mtoto	Amepewa rufaa kwenda: 1. (CTC), 2. (HBC), 3. (HLF), 4. Kwingineko (taja kwenye kisanduku cha chini)	Dawa za ARV za Nyongeza (Refill) / Tarehe		Hatua ya sasa ya ugonjwa/ Tarehe	Ufuatiliaji tiba kwa usahihi (Adherance) (hesabu vidonge na jazia)	Unasihi wa ulishaji wa mtoto	Amepewa rufaa kwenda: 1. (CTC), 2. (HBC), 3. (HLF), 4. Kwingineko (taja kwenye kisanduku cha chini)	Dawa za ARV za Nyongeza (Refill) / Tarehe		Maoni
																				AZT	ART					AZT	ART					AZT	ART					AZT	ART					AZT	ART					AZT	ART					AZT	ART	
					EBF RF	AZT	ART	N	1 2		1 2 3 4		1 2	1 2 3 4		1 2 3 4	N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H	
					EBF RF	AZT	ART	N	1 2		1 2 3 4		1 2	1 2 3 4		1 2 3 4	N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H	
					EBF RF	AZT	ART	N	1 2		1 2 3 4		1 2	1 2 3 4		1 2 3 4	N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H	
					EBF RF	AZT	ART	N	1 2		1 2 3 4		1 2	1 2 3 4		1 2 3 4	N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H		N H	N H	1 2 3 4	N H	N H	

APPENDIX 9-D: PMTCT Mother-Child Follow-up Register (Rejesta ya ufuatiliaji wa mtoto mchanga aliyezaliwa na mama mwenye VVU)

Mama									Mtoto										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Namba	Tarehe ya kuandikishwa (tr/mw/mk)	Namba ya Kadi ya mama ya ANC/CTC	Dawa za ARV alizomeza mama wakati wa uchungu na Kujifungua: 1. AZT+3TC, 2. AZT+3TC+NVP, 3. ART, 4. Hakupewa	Unasihi wa njia za uzazi wa mpango na Vitendo/tarehe: 1. Vichocheo, 2. Kondomu, 3. nyinginezo	Ameweka wazi hali yake ya maambukizi	Amejiunga na kikundi WAVIU	Namba ya kadi ya kliniki ya mtoto < 5 / HEID namba	Jinsi ya Mtoto	Tarehe ya Kuzaliwa/ umri wakati wa hudhurio (kwa wiki)	Uzito wakati wa kuzaliwa/ Uzito wa sasa (Kg)	Unasihi wa ulishaji wa mtoto na vitendo: 1 = EBF, 2 = RF	Dawa ya Kinga ya NVP Syrup kwa mtoto baada ya kuzaliwa	Nyongeza ya dawa ya Kinga ya NVP Syrup kwa mtoto kwenye hudhurio la kwanza	Ameanzishiwa dawa ya NVP syrup kwa mara ya kwanza RCH/Tarehe	Tarehe aliyoanzishiwa "CTX"/Umri	Tarehe ya Kipimo cha Kwanza cha VVU/Umri wa Mtoto	Kipimo cha Kwanza cha VVU/Tarehe ya Majibu		Tarehe ya Majibu ya Kipimo cha Kwanza cha VVU aliyopewa mzazi au mlezi
																	Kipimo cha DNA PCR	Kipimo cha Antibody	
			1 2 3 4	1 2 3	N	N H		ME KE			1 2	N H	N H	N H			P N U	P N U	
			1 2 3 4	1 2 3	N	N H		ME KE			1 2	N H	N H	N H			P N U	P N U	
			1 2 3 4	1 2 3	N	N H		ME KE			1 2	N H	N H	N H			P N U	P N U	
			1 2 3 4	1 2 3	N	N H		ME KE			1 2	N H	N H	N H			P N U	P N U	
			1 2 3 4	1 2 3	N	N H		ME KE			1 2	N H	N H	N H			P N U	P N U	

APPENDIX 9-D: PMTCT Mother-Child Follow-up Register (Rejesta ya ufuatiliaji wa mtoto mchanga aliyezaliwa na mama mwenye VVU) *(continued)*

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Miezi 2			Miezi 3			Miezi 4			Miezi 5			Miezi 6			Miezi 7			Miezi 8		
Uzito (Kg)	Unasihi wa ulishaji wa mtoto na vitendo: 1 = EBF, 2 = RF	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi wa ulishaji Mtoto: 1 .EBF, 2. RF	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi wa ulishaji wa mtoto na vitendo: 1 = EBF, 2 = RF	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi wa ulishaji wa mtoto na vitendo: 1 = EBF, 2 = RF	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi wa ulishaji Mtoto: 1 .EBF, 2. RF	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX

APPENDIX 9-D: PMTCT Mother-Child Follow-up Register (Rejesta ya ufuatiliaji wa mtoto mchanga aliyezaliwa na mama mwenye VVU) *(continued)*

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
Miezi 9			Miezi 10			Miezi 11			Miezi 12			Miezi 13			Miezi 14			Miezi 15		
Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto 1. BF + vyakula vya nyongeza 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX

APPENDIX 9-D: PMTCT Mother-Child Follow-up Register (Rejesta ya ufuatiliaji wa mtoto mchanga aliyezaliwa na mama mwenye VVU) *(continued)*

63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
	Miezi 16			Miezi 17			Miezi 18										
Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Uzito (Kg)	Unasihi na Ulishaji Mtoto: 1. BF + vyakula vya nyongeza, 2. RF + vyakula vya nyongeza	Dawa anazotumia mtoto/Tarehe	Tarehe ya Kipimo cha pili cha VVU (wiki 6 baada ya kuacha kunyonya)/Umri wa Mtoto	Kipimo cha pili cha VVU/Tarehe ya Majibu		Kipimo kilichotumika kuthibitisha majibu ya VVU PCR = 1 Ab = 2/Umri	Tarehe ya kipimo cha VVU cha kuthibitisha	Majibu ya VVU/ Tarehe ya majibu	Tarehe ya Majibu ya uthibitisho wa VVU aliyopewa mzazi au mlezi	Namba ya CTC ya mtoto	Maoni
										Kipimo cha Antibody	Kipimo cha DNA PCR						
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		P N U	P N U	1 2		P N			
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		P N U	P N U	1 2		P N			
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		P N U	P N U	1 2		P N			
	1 2	NVP CTX		1 2	NVP CTX		1 2	NVP CTX		P N U	P N U	1 2		P N			

APPENDIX 9-E: Transfer Form

NATIONAL PMTCT SERVICES

NATIONAL PMTCT SERVICES REFERRAL/TRANSFER FORM

Date:___/_____/_____ ANC Card #:_____ Child Card #:_____ CTC #:_____

Referral from: Facility name._____ Facility code _____

Referral type: ☐ANC ☐L&D ☐Postnatal ☐Under-5

Referral to: Facility name _____

Name (of patient referred): First _____ Middle _____ Last _____

Date of birth:___/_____/_____ Current age:_____

Reason for referral/transfer:_____

Current status: Date:___/____/____ Weight:____ Function:_____ Clinical stage:_____ CD4:_____

Estimated/actual delivery – date:___/_____/_____

Mother ARVs:
☐NVP ☐AZT ☐3TC ☐ART

Infant ARVs:
☐NVP ☐AZT ☐Infant CTX

Current infant feeding practice: ☐EBF ☐RF ☐MF ☐Other ☐N/A

Infant last HIV test: Date:___/____/____ Type: ☐Ab ☐PCR Result: ☐R ☐P ☐N ☐I

Currently on TB treatment? ☐YES ☐NO If yes, date started: ___/_____/_____

Other relevant meds (including INH, CTX, Diflucan):_____

Drug allergies:_____

Other relevant clinical notes:_____

Name, signature and stamp:_____

FEEDBACK SECTION

Services Provided: To be filled out by the organization providing the requested service

Date:___/_____/_____

Patient Name:_____ Date of Birth–Age: ___/____/____–_____

Services Provided:

☐Services provided

☐Services completed as requested: ☐Yes ☐No

☐Follow-up needed: services:_____ Date for follow-up: ___/_____/_____

Additional Comments:_____

Name of Organization/Health Facility: Contact Person/referral focal person:

_____ _____

APPENDIX 9-F: Mother's Health Card

RCH 4 JAMHURI YA MUUNGANO WA TANZANIA
WIZARA YA AFYA

Mimba isiyo na matatizo mama anahitaji mahuthurio 4: chini ya wiki 16, kati ya wiki 20-24, 28-32, 36-40.

TAREHE YA HUDHURIO						
UZITO (Kilo) BLOOD PRESSURE (mmHg) 140/90						
CTX – include specification for when to provide (CD4 >350)						
▪ Uzazi wa Mpango (C for condom counselling)						
▪ Maandalizi ya kujifungua						
▪ Infant feeding, check for counselling, code for intention to EBF, RF	☐	☐	☐	☐	☐	☐
▪ PMTCT/ART (0, -, 1, 1N, 1Z(start date), 1A (+ start date), 2(-PMTCT 1K)						
▪ CTC link (E0, E1, 1R, if enrolled record CTC#, date)						
▪ Adherence, disclosure, and support						

REKODI YA UCHUNGU

MENGINEYO MUHIMU:_____ Postpartum ARVs: ☐1Z ☐1N ☐1A ☐NONE

MTOTO: Jinsia:_____ Uzito:_____ Kgs:_____

APGAR SCORE: 1 min. _____ 5 min. _____

(Kama mama ni PMTCT1, je mtoto amepewa ARVs (Nevirapine – within 72 hrs)

☐1Z ☐1N ☐NONE

AZT dispensed: ☐1 wk ☐4 wks

Newborn feeding practice: EBF RF Infant feeding counselling and support ☐

VIDOKEZO VYA HATARI KWA MTOTO BAADA YA KUZALIWA

*** Weka alama (✓) panapohusika. Mpeleke Hospitali**

☐Uzito chini ya kilo 2.5 ☐Homa kali zaidi ya digri 38º ☐Mtoto kushindiwa kunyonya ☐Hali mbaya ya mtoto (APGAR SCORE) chini ya 5 baada ya dakika 5

Chunguza maumbile ya mtoto

REKODI YA MAHUDHURIO YA MAMA BAADA YA KUJIFUNGUA HADI WIKI 6

Baada ya kujifungua mama ahudhurie kliniki mara tatu au zaidi . Chunguza yafuatayo, weka (✓) au Ndiyo, Hapana apohusika. Pale unapogundua tatizo mpeleke kwa Mganga au Hospitali Kwa mama na mtoto wasio na matatizo wanahitaji mahuthurio matatu: siku ya 7, 28, 42.

A: REKODI YA MAHUDHURIO	**Mahudhurio baada ya siku 7**	**Mahudhurio baada ya siku 28**	**Mahudhurio baada ya siku 42**
Tarehe			
Joto la Mwili (38oC na zaidi)			
Blood Pressure 160/100 na zaidi (BP mmHg)			
Hb chini ya 60% (8.5gm/dl)			
Ask about infant feeding options (EBF, RF, Other), check for counselling	☐	☐	☐
Uzazi wa Mpango (C=condom use counselling):			
Ushauri umetolewa? Ndiyo/Hapana			

APPENDIX 9-G: Child Health Card (Outside)

TAREHE	HALI YA UKUAJI NA MAENDELEO YA MTOTO	RUDI TAREHE

Mtoto apimwe uzito kila mwezi.

Toleo la 2002

TAREHE	HALI YA UKUAJI NA MAENDELEO YA MTOTO	RUDI TAREHE

Follow-up and record infant feeding practice and support at each visit (IFC = infant feeding counselling; EBF = exclusive breastfeeding; RF = replacement feedin

Lazima mtoto apate cheti cha kuzaliwa kutoka kwa Msajili wa Vizazi na Vifo.

KADI HII HAIUZWI **RCH 1**

Jamhuri ya Muungano wa Tanzania

Wizara ya Afya

KADI YA KLINIKI YA MTOTO

Jina la Kliniki	Na. ya Mtoto
Jina la Mtoto	Mume / Mke

Tarehe ya Kuzaliwa;....../..../.....   Uzito wa Kuzaliwa Kilo:

Mahali Alipozaliwa   Hospitalini / Nyumbani / Njiani

Jina la Mama / Mlezi

Jina la Baba / Mlezi

Mahali Mtoto Anapoishi Sasa	Kijiji:... Kijiji:............................ Kitongoji:................................

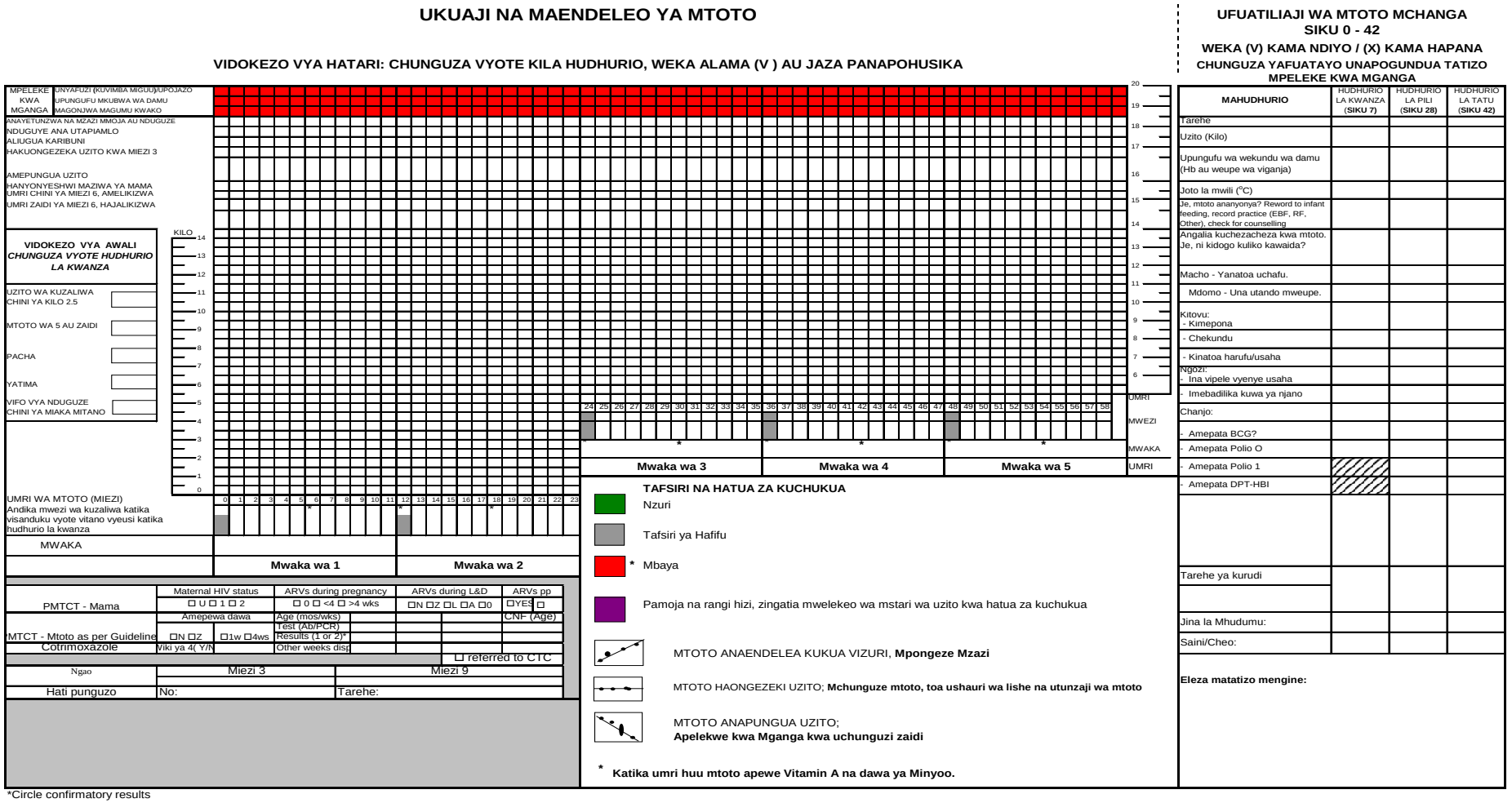
CHANJO (Andika Tarehe aliyopata)

AINA YA CHANJO	Anapozaliwa au mara ya kwanza afikapo kliniki	Marudio miezi 3 kama **kovu** hakuna			
BCG (Kifua Kikuu) ***Sindano Bega kulia***					
POLIO (Kupooza) ***Matone/Mdomoni***	Anapozaliwa	Mwezi 1	Miezi 2	Miezi 3	
DPT-HB (Donda Koo, Kifaduro, Pepopunda na Hepatitis B) ***Sindano Paja la kushoto***					
SURUA ***Sindano Paja kulia***	Miezi 9				Ngao

VITAMINI A

VITAMINI A ***Matone/Mdomoni***	Miezi 9	Miezi 15	Miezi 21

APPENDIX 9-G: Child Health Card (Inside)



*Circle confirmatory results

APPENDIX 9-H: PMTCT Antenatal Clinic (ANC) Monthly Summary Form

PMTCT Antenatal Clinic (ANC) Monthly Summary Form
Huduma ya Wajawazito- Muhtasari wa kila mwezi

Kituo:	**Ngazi ya kituo:**	**Msimbo wa kituo:**
Wilaya:	**Mkoa:**	
Mwezi:	**Mwaka:**	

		Namba
ANC01	Idadi ya wajawazito wapya mwezi huu	
ANC02	Idadi ya wajawazito waliofahamu kuwa wana maambukizi ya VVU kabla ya kuanza kliniki	
ANC03	Idadi ya wajawazito wapya waliopimwa VVU katika kliniki ya wajawazito	
ANC04	Jumla ya wajawazito waliopimwa VVU katika kliniki ya wajawazito kwa kipimo cha kwanza	
ANC05	Idadi ya wajawazito waliopimwa na kukutwa maambukizi ya VVU kwa kipimo cha kwanza	
ANC06	Idadi ya wajawazito waliopewa unasihi baada ya kupimwa VVU kwa kipimo cha kwanza	
ANC07	Idadi ya wajawazito waliopimwa VVU kwa kipimo cha pili	
ANC08	Idadi yawajawazito waliopimwa kwa kipimo cha pili na kukutwa na maambukizi ya VVU	
ANC09	Idadi ya wajawazito waliopewa unasihi baada ya kupimwa VVU kwa kipimo cha pil	
ANC010	Idadi ya wenza waliopimwa VVU katika kliniki ya wajawazito	
ANC011	Idadi ya wenza waliogundulika kuwa na maambukizi ya VVU katika kliniki ya wajawazito	
ANC012	Idadi ya wenza waliopewa unasihi katika kliniki ya wajawazito baada ya kupimwa VVU	
ANC013	Idadi ya wajawazito walipiomwa VVU na wenza wao (Couple) kwa pamoja katika kliniki ya wajawazito	
ANC014	Idadi ya wajawazito na wenza waliopata majibu tofauti (discordant) baada ya kupima VVU kliniki ya wajawazito	
Maelezo ya ziada ya viashiria		

Fomu imejazwa na:	**Cheo:**	**Tarehe:**
Simu ya aliyejaza fomu		
Fomu imehakikiwa na :	**Cheo:**	**Tarehe:**
Simu ya mhakiki:		

APPENDIX 9-I: PMTCT Maternity (L&D) Monthly Summary Form

FOMU YA TAARIFA YA MWEZI YA UZUIAJI WA MAAMBUKIZI YA VVU TOKA KWA MTOTO KWENDA KWA MTOTO – UCHUNGU NA KUJIFUNGUA (WODI YA UZAZI)

Kituo:	**Ngazi ya Kituo:**	**Msimbo wa Kituo:**
Wilaya:	**Mkoa:**	
Mwezi:	**Mwaka:**	

MAT 01	Idadi ya wanawake waliojifungua	
MAT 02	Idadi ya wanawake ambao hali ya maambukizi ya VVU inajulikana kutoka Kliniki (ANC)	
MAT 03	Idadi ya wanawake waliofahamu kuwa wana maambukizi ya VVU kutoka Kliniki ya ANC	
MAT 04	Idadi ya wanawake ambao hali ya maambukizi ya VVU haijulikani kutoka Kliniki ya ANC	
MAT 05	Idadi ya wanawake waliopimwa VVU wakati wa uchungu	
MAT 06	Idadi ya wanawake waliopimwa VVU baada ya kujifungua	
MAT 07	Idadi ya wanawake waliogundulika na VVU wakati wa uchungu na baada ya kujifungua	

Wanawake wote wenye VVU

MAT 08	Wanawake wote wenye maambukizi ya VVU (MAT 03 + MAT 07)	
MAT 09	Idadi ya waliomeza AZT + 3TC wakati wa Uchungu	
MAT 10	Idadi ya wanawake wote waliomeza NVP, AZT na 3TC wakati wa Uchungu	
MAT 11	Idadi ya wanawake walioanzishiwa NVP + AZT + 3TC kwa mara ya kwanza wakati wa uchungu	
MAT 12	Idadi ya wanawake wanaotumia dawa za (ART) wakati wa uchungu na kujifungua	
MAT 13	Idadi ya wanawake waliopewa “Tail”* (AZT na 3TC) wakati wa kuruhusiwa	
MAT 14	Idadi ya watoto wachanga waliozaliwa HAI na wanawake wenye VVU	
MAT 15	Idadi ya watoto wachanga waliopewa dawa ya NVP Syrup katika wodi ya uchungu na kujifungua	
MAT 16	Idadi ya watoto wanaonyonya maziwa ya mama pekee	
MAT 17	Idadi ya watoto walioanzishiwa maziwa mbadala	
MAT 18	Idadi ya wanawake wenye VVU waliopewa rufaa kwenda CTC wakati wa kuruhusiwa	
Maelezo ya ziada ya viashiria		

Fomu imejazwa na:	**Cheo:**	**Tarehe:**
Fomu imehakikiwa na:	**Cheo:**	**Tarehe:**
Simu ya Mhakiki:		

APPENDIX 9-J: PMTCT Care Register Monthly Summary Form

Fomu ya Huduma ya Uzuiaji wa Maambukizi ya VVU toka Kwa Mama kwenda kwa Mtoto – Mhutasari wa Kila mwezi

Kituo:	**Ngazi ya Kituo:**	**Msimbo wa Kituo:**
Wilaya:	**Mkoa:**	
Mwezi wa Ripoti:	**Mwaka wa Kituo:**	

PCR 01	Idadi ya wajawazito wenye VVU walioandikishwa mwezi huu	
PCR 02	Idadi ya wajawazito wenye VVU walioanza kutumia “CTX”	
PCR 03	Idadi ya wajawazito wenye VVU waliopata unasihi juu ya ulishaji mtoto	
PCR 04	Idadi ya Wajawazito wenye VVU walioweka wazi hali zao za maambukizi ya	
PCR 05	Idadi ya Wajawazito wenye VVU walio fanyiwa tathimini ya kuanzishiwa matibabu ya ART mwezi huu (WHO clinical staging au kipimo cha CD4)	
PCR 06	Idadi ya wajawazito wenye VVU waliotathiminiwa kuanzishiwa matibabu ya ART mwezi huu kwa kipimo cha CD4 pekee	
PCR 07	Idadi ya Wajawazito wenye VVU wenye sifa ya kuanza matibabu ya ART (kwa kutumia WHO clinical staging **AU** kipimo cha CD4 **AU** vyote viwili)	
PCR 08	Idadi ya Wajawazito wenye VVU walioandikishwa CTC mwezi huu	
PCR 09	Idadi ya Wajawazito wenye VVU walioanzishiwa dawa ya AZT kliniki ya Wajawazito	
PCR 10	Idadi ya Wajawazito wenye VVU walioanzishiwa dawa ya ART kliniki ya wajawazito (ANC)	
PCR 11	Idadi ya wajawazito wenye VVU waliokuja ANC wakiwa wanatumia tiba ya ART	
PCR 12	Idadi ya wajawazito wenye VVU waliokosa hudhurio lao	
Maelezo ya ziada ya viashiria		

Fomu imejazwa na:	**Cheo:**	**Tarehe:**
Fomu imehakikiwa na:	**Cheo:**	**Tarehe:**
Simu ya Mhakiki:		

APPENDIX 9-K: Mother Child Follow-up

Taarifa ya mwezi ya Uzuiaji wa Maambukizi ya VVU toka kwa Mama kwenda kwa Mtoto- Ufuatiliaji mama na Mtoto

Kituo:	**Ngazi ya Kituo:**	**Msimbo wa Kituo:**
Wilaya:	**Mkoa:**	
Mwezi wa Ripoti:	**Mwaka wa Kituo:**	

MC 01	Jumla ya watoto waliozaliwa na mama wanaoishi na VVU walioandikishwa mwezi huu	
MC 02	Idadi ya watoto walioandikishwa mwezi huu ambao walioanzishiwa NVP Syrup baada ya kuzaliwa	
MC 03	Idadi ya watoto walioandikishwa mwezi huu na kuanzishiwa NVP Syrup katika hudhurio la kwanza RCH.	
MC 04	Jumla ya watoto wanaotumia dawa ya NVP Syrup mwezi huu	
MC 05	Jumla ya watoto wanaonyonya maziwa ya mama pekee	
MC 06	Jumla ya watoto wanaotumia maziwa mbadala	
MC 07	Jumla ya watoto wanaotumia dawa ya co-trimoxazole (CTX) mwezi huu	
MC 08	Jumla ya watoto walioanzishiwa dawa ya co-trimoxazole (CTX) mwezi huu	
MC 09	Jumla ya watoto walioanzishiwa dawa ya co-trimoxazole (CTX) wakiwa na umri wa wiki nne hadi kufikia miezi 2.	
MC 10	Jumla ya watoto waliopimwa VVU mwezi huu kwa kipimo cha kwanza DNA-PCR	
MC 11	Jumla ya watoto waliothibitika kuwa na VVU kwa kutumia kipimo cha kwanza cha DNA PCR	
MC 12	Jumla ya watoto waliochukuliwa kipimo cha kwanza cha DNA PCR (DBS) ndani ya miezi miwili ya umri wa motto	
MC 13	Jumla ya watoto waliothibitika kuwa na VVU kwa kutumia kipimo cha kwanza cha DNA PCR ndani ya miezi miwili ya umri wa mtoto	
MC 14	Jumla ya watoto waliopimwa VVU kwa kipimo cha Pili (Antibody AU PCR)	
MC 15	Jumla ya watoto waliothibitika kuwa na VVU kwa kipimo cha Pili cha DNA PCR	
MC 16	Jumla ya wazazi/walezi waliopata majibu ya kipimo cha VVU cha watoto	
MC 17	Jumla ya watoto waliopimwa VVU kwa kutumia kipimo cha Antibody wakiwa na umri wa miezi 18	
MC 18	Jumla ya watoto waliothibitika kuwa na VVU wakiwa na umri wa miezi 18 kutumia kipimo cha Antibody	
MC 19	Jumla ya watoto waliandikishwa kwenye vituo vya huduma na matibabu (CTC)	
MC 20	Idadi ya wanawake waliopewa unasihi na kutumia njia za uzazi wa mpango	
Maelezo ya ziada ya viashiria		

Fomu imejazwa na:	**Cheo:**	**Tarehe:**
Fomu imehakikiwa na:	**Cheo:**	**Tarehe:**
Simu ya Mhakiki:		

APPENDIX 9-L: Rejista Ya Dawa Za PMTCT

1	2	3	4		5				6			7							8
Tarehe	ID No Mama/ Mtoto	LENGO	VIDONGE VILIVYOGAWIWA ANC (Mama)		VIDONGE VILIVYOGAWIWA L&D (Mama)				DAWA ZILIZOTOLEWA L&D NA KLINIKI YA WATOTO CHINI YA MIAKA MITANO (Mtoto)			SALIO							VIFUPISHO VYA JINA LA MTOA HUDUMA
												VIDONGE					CHUPA		
			Zidovudine 300 mg (AZT)	Cotrimoxazole 480 mg (CTX)	Lamivudine 150 mg (3TC)	Zidovudine 300mg (AZT)	Lamivudine/Zidovudine (3TC/AZT)	Nevirapine 200mg (NVP)	Nevirapine 50mg/5ml (NVP) (mls) Chupa	Cotrimoxazole (CTX) 240mg/ml (mls) Chupa	Cotrimoxazole 480 mg (CTX)	Lamivudine 150 mg (3TC)	Zidovudine 300 mg (AZT)	Lamivudine/Zidovudine (3TC/AZT)	Nevirapine 200 mg (NVP)	Cotrimoxazole 480 mg (CTX)	Nevirapine 50mg/5ml (NVP) (mls) Chupa	Cotrimoxazole (CTX) 240mg/ml (mls) Chupa	
JUMLA YA UKURASA																			

Salio kuhamishwa kwenye ukurasa mpya kama ukurasa umejaa

APPENDIX 9-M: Fomu Ya Matumizi Na Uhakiki Ubora Wa Vitendanishi Vya Upimaji Wa Vvu: Ukurasa Wa Taarifa Za Jumla

TAARIFA ZA JUMLA:

Jina la Kituo: _____

Aina ya Kituo (GOV, FBO, NGO, Nyingine):

Aina ya Huduma itolewayo na Kituo: (weka tiki inayohusika)

- **VCT**
- **Mobile VCT**
- **TB Center**
- **Antenatal Clinic (PMTCT)**
- **Outpatient Clinic (OPD)**
- **PITC**
- **Clinical Diagnosis**
- **Nyingine (ainisha) : ____**

Wilaya: _____

Algorithm (weka tiki inayohusika)

- **2-test**
- **3-test**

Algorithm Type: (weka tiki inayohusika)

- **Serial**
- **Parallel**

Tarehe ya Mwanzo ya Ujazaji:
_____/_____/_____

Tarehe ya Mwisho ya Ujazaji:
_____/_____/_____

Namba ya kitabu (1, 2, …): _____

APPENDIX 9-M: Fomu Ya Matumizi Na Uhakiki Ubora Wa Vitendanishi Vya Upimaji Wa Vvu: Ukurasa Wa Taarifa Za Jumla *(continued)*

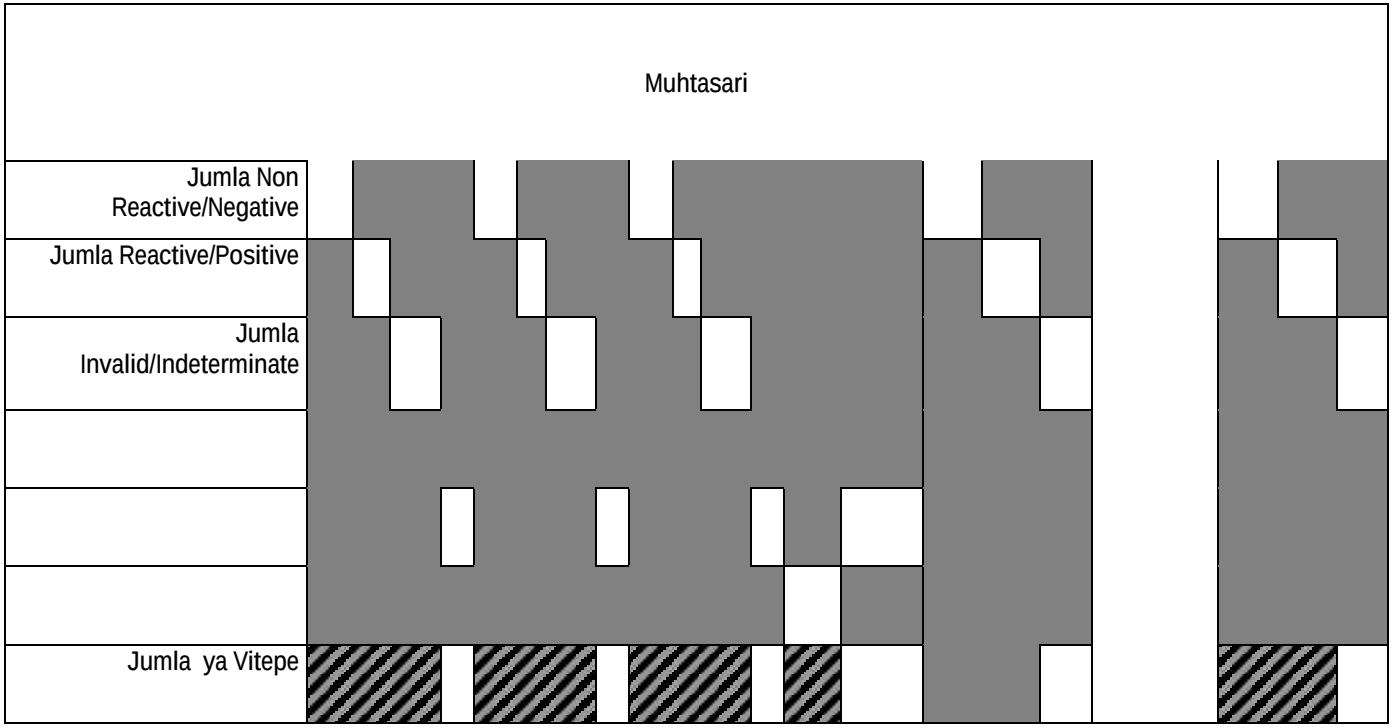
MATUMIZI NA UHAKIKI UBORA WA VITENDANISHI VYA UPIMAJI VVU

						TYPE OF TEST							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Namba	Tarehe	Namba ya Mteja/ Mgonjwa	Umri (Miaka)	Jinsia (Me/Ke)	Lengo la Matumizi (Zungushia moja) Angalia Sehemu A kwa ufafanuzi	HIV Test: 1 Jina la Kit Lot/Batch No. _____ Tar ya kuisha muda---/---/---- Matokeo: Zungushia moja (Angalia sehemu B kwa ufafanuzi)	HIV Test: 2 Jina la Kit: Determine Lot/Batch No. _____ Tar ya kuisha muda---/---/---- Matokeo: Zungushia moja (Angalia sehemu B kwa ufafanuzi)	HIV Test: 3 Jina la Kit: Unigold Lot/Batch No. _____ Tar ya kuisha muda---/---/---- Matokeo: Zungushia moja (Angalia sehemu B kwa ufafanuzi)	HIV Test: 4 DBS-PCR Cards Lot/Batch No._____ Tar ya kuisha muda---/---/-- Matokeo: Zungushia moja (Angalia sehemu B kwa ufafanuzi)	Matokeo ya mwisho Zungushia moja (Angalia sehemu B kwa ufafanuzi)	Weka tiki (√) kama sampuli imepelekwa kwa ajili ya uhakiki ubora	Matokeo ya uhakiki ubora	Maelezo	Jina la Mtoa Huduma
1					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
2					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
3					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
4					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
5					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
6					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
7					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
8					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
9					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
10					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
11					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
12					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
13					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		
14					CLD EID Mafunzo EQA Nyingine	NR R INV W	NR R INV W	NR R INV W	S W	NEG POS IND		NEG POS IND		

APPENDIX 9-M: Fomu Ya Matumizi Na Uhakiki Ubora Wa Vitendanishi Vya Upimaji Wa Vvu: Ukurasa Wa Taarifa Za Jumla *(continued)*

MATUMIZI NA UHAKIKI UBORA WA VITENDANISHI VYA UPIMAJI VVU

Kielelezo	
(A): Lengo	
CLD= Clinical Diagnosis	NR=Non Reactive
EID=HIV Early infant Diagnosis	R=Reactive
EQA= External Quality Assessment (DBS or DTS)	INV=Invalid
	IND=Indeterminate
	W=Wastage
	S=DBS Cards Sent
	NEG=Negative POS=Positive



APPENDIX 9-N: FOMu A3: Taarifa Ya Mwezi Ya Matumizi Ya Arv Kwa Vituo Tegemezi

Jina la Kituo:_____ Aina ya Kituo (Gov/NGO/FBO/Other):_____
Jina la Kituo Mama:_____ Wilaya:_____
Kipindi cha Taarifa: Mwezi_____ Mwaka_____

Maelezo ya Bidhaa	Kipimo cha Ugavi U	Salio la Mwanzo A	Kiasi kilichopokelewa B	Kiasi kilichotumika C	Upotevu / Marekebisho D D=E + C–A-B	Salio la Mwisho (Hesabu kwa mkono) E	Kiasi cha juu cha Shehena F (F=C×2)	Kiasi cha Kuagiza G (G=F–E)	Kiasi kinachoombwa H (H=G÷U)	Maelezo

MUHTASARI WA IDADI YA WAGONJWA KULINGANA NA DAWA MCHANGANYIKO (REGIMENS) WANAZOTUMIA

Dozi Mchanganyiko	Idadi ya Wagonjwa waliopatiwa ARVs kwa mwezi huu	Makisio ya Wagonjwa wapya	Idadi ya Wagonjwa waliofariki/walioacha tiba	Maelezo
Watu Wazima				
3TC /AZT + EFV				
3TC /AZT + NVP				
3TC /d4T/NVP				
3TC + d4T + EFV				
TDF/FTC/EFV				
TDF/FTC + NVP				
TDF + 3TC + EFV				
TDF + 3TC + NVP				
ABC + ddI + SQV/r				
ABC + TDF + LPV/r				
ABC + ddI + LPV/r				
ABC + TDF + SQV/r				
Watoto				
AZT + 3TC + NVP				
d4T + 3TC + NVP				
AZT + 3TC + EFV				
d4T + 3TC + EFV				
ABC + ddI + LPV/r				

Imetayarishwa na: _____ Sahihi: _____Tarehe: _____
Imewasilishwa na: _____ Sahihi: _____Tarehe: _____
Imepokelewa na: _____ Sahihi: _____Tarehe: _____

APPENDIX 9-O: Form A6: Taarifa Ya Mwezi Ya Matumizi Ya Vitendanishi Vya Upimaji Wa Vvu Ya Vituo Tegemezi

Jina la Kituo:_____ Aina ya Kituo (Gov/NGO/FBO/Other):_____
Jina la Kituo Mama:_____ Wilaya:_____
Kipindi cha Taarifa: Mwezi_____ Mwaka_____

Maelezo ya Bidhaa	Kipimo cha Ugavi U	Salio la Mwanzo A	Kiasi kilichopokelewa B	Kiasi kilichotumika C	Upotevu / Marekebisho D D=E + C–A-B	Salio la Mwisho (Hesabu kwa mkono) E	Kiasi cha juu cha Shehena F (F=C×2)	Kiasi cha Kuagiza G (G=F–E)	Kiasi kinachoombwa H (H=G÷U)	Maelezo

MUHTASARI WA MWEZI WA MATUMIZI YA VITENDANISHI VYA UPIMAJI WA VVU										
KITENDANISHI	VCT	PITC	PMTCT	BLOOD SAFETY	MAFUNZO	UHAKIKI WA UBORA	INVALID	ZILIZOHARIBIKA	NYINGINE	JUMLA
SD Bioline										
Determine										
Unigold										
Nyingine										

MUHTASARI WA UPIMAJI	
Jumla Positive	
Jumla Negative	
Jumla Inconclusive	
Jumla Waliopima	

Imetayarishwa na: _____ Sahihi: _____ Tarehe: _____
Imewasilishwa na: _____ Sahihi: _____ Tarehe: _____
Imepokelewa na: _____ Sahihi: _____ Tarehe: _____

APPENDIX 9-P
Tanzania Drug and Toxicology Information Services (TADATIS)

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.: - _____ Date of Birth (dd-mm-yyyy) or age:- _____	Sex: - Male ❑ Female ❑ 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 **specify)**:……....	❑ No ❑ Yes **(if yes please**
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: _____

Contact phone No: _____ E-mail: _____

Signature: _____ Date of this report: ____/____/____

Name and Address of the health facility:

_____

_____

_____

_____

❑ *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)***

First Fold

Guide to filling the form

How to report?

- Dully fill in the form as required
- Use a separate form for each patient
- Report direct to TFDA through the following addresses:-

Mail : Tanzania Food and Drugs Authority,
P. O. Box 77150, Dar es Salaam

Fax:: 22- 2450793

Phone: 22-2450512 / 2450751

Internet; http://www.tfda.or.tz
E-mail: adr@tfda.or.tz

The ADR reporting form and the guidelines are also available for downloading at http://www.tfda.or.tz

An Adverse Drug Reaction (ADR) is defined as a reaction which is noxious and unintended, and which occurs at doses normally used in human for prophylaxis, diagnosis, or therapy of a disease, or for the modification of physiological function.

What to report?

Please report all undesirable patient effect suspected to be associated with drugs, cosmetics or medical devices use.

Report even if:

- You're not sure that the product caused the event
- You don't have all the details

When to report?

As soon as possible

Submission of follow-up reports:

Any follow-up information for an ADR that has already been reported can be sent on another ADR form or it can be communicated directly to TFDA by telephone, fax or e-mail. Please indicate that it is a follow-up report.. It is very important that follow-up reports are identified and linked to the original report.

Moisten gum and fold. For maximum adhesion, press down for few seconds

Second Fold

POSTAGE WILL BE PAID BY LICENCEE

No postage stamp required
If posted in Tanzania

BUSINESS REPLY SERVICE LICENCE No. BRS 01

TO: THE DIRECTOR GENERAL
TANZANIA FOOD AND DRUGS AUTHORITY
P. O. BOX 77150
DAR ES SALAAM

NB: The forms are provided free of charge by TFDA and as they are already pre-paid, reporters will not be charged for postal mailing