



The United Republic of Tanzania
**Ministry of Health
and Social Welfare**

**Prevention of Mother-to-Child
Transmission of HIV**

Participant Manual

May 2007

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The National Prevention of Mother-to-Child Transmission of HIV (PMTCT) Training Package is a comprehensive approach to the training of healthcare workers. The components in this package are:

- Trainer Manual
- Participant Manual
- Presentation Booklet
- Pocket Guide
- Wall Chart

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Foreword

The transmission of HIV from a pregnant mother to her infant during pregnancy, labour, delivery, or breastfeeding is the most significant source of HIV infection in infants and young children. The administration of antiretroviral prophylaxis, treatment, and proper care during the antenatal and intrapartum periods can significantly reduce the rate of mother-to-child transmission of HIV (MTCT). Postpartum and follow-up care are essential components of a comprehensive care package for mothers and families affected by HIV.

The Ministry of Health and Social Welfare (MOHSW) is committed to the development of a comprehensive Prevention of Mother-to-Child Transmission (PMTCT) programme, fully integrated into reproductive-child health services. To facilitate the rapid scale-up of high quality PMTCT programmes, the MOHSW has developed the National PMTCT Training Package 2007 to educate healthcare workers on PMTCT program services. The national training is comprised of eight interactive, skill-building modules:

- Module 1: Introduction to HIV/AIDS
- Module 2: Overview of HIV Prevention in Mothers, Infants, and Young Children
- Module 3: Stigma and Discrimination Associated with HIV/AIDS
- Module 4: Counselling and Testing
- Module 5: Specific Interventions to Prevent MTCT
- Module 6: Infant Feeding in the Context of HIV Infection
- Module 7: Comprehensive Care and Support for Mothers and Families with HIV Infection
- Module 8: Safe and Supportive Care in the Work Setting

The national training presents the basic knowledge for PMTCT programme implementation. It is a comprehensive resource for healthcare workers and managers, but should be combined with a practicum for clinical training in a PMTCT setting. Training healthcare workers is an essential component of effective PMTCT programmes.

This training is a collaborative effort between the government and non-governmental partners working to improve the quality of care for women and their families. The training has adapted information primarily from the following resources:

- National PMTCT manual, September 2004
- National Guidelines for the Clinical Management of HIV and AIDS
- National Guidelines for PMTCT
- Prevention of Mother-to-Child Transmission of HIV Generic Training Package developed by WHO and CDC, 2004

The Ministry of Health and Social Welfare presents this national training package as part of an overall strategy to achieve the reduction and eventual elimination of mother-to-child HIV transmission, and assist the healthcare worker in providing comprehensive care to women and their families.

Abbreviations and Acronyms

AIDS	Acquired immunodeficiency syndrome
ANC	Antenatal care
ARV	Antiretroviral
ART	Antiretroviral treatment
AZT	Azidothymidine, trade name for Zidovudine (ZDV)
BMS	Breastmilk substitute
CDC	Centers for Disease Control and Prevention
DACCOM	District AIDS Coordinating Committee
ELISA	Enzyme-linked immunosorbent assay
FAO	United Nations Food and Agricultural Organisation
HAART	Highly active antiretroviral therapy
HIV	Human immunodeficiency virus
HCW	Healthcare worker
IMCI	Integrated Management of Childhood Illnesses
ISO	International Organization for Standardization
MOHSW	Ministry of Health and Social Welfare
MTCT	Mother-to-child transmission of HIV
NGO	Non-governmental organisation
NVP	Nevirapine
OI	Opportunistic infection
PEP	Post-exposure prophylaxis
PCP	<i>Pneumocystis pneumonia</i>
PLHWA	People living with HIV/AIDS
PMTCT	Prevention of mother-to-child transmission of HIV
RCH	Reproductive and Child Health Services
STD/I	Sexually transmitted disease/infection

TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United National Population Fund
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development
WHO	World Health Organization

Course Introduction



Total Module Time: 95 minutes (1 hour, 35 minutes)

After completing the Course Introduction, participants will be able to:

- Describe the structure and organisation of the course.
- Identify the ground rules for the course.
- Acquaint themselves with other participants in the course.
- Verbalise concerns about HIV/AIDS in the healthcare setting.
- State expectations for the course.
- State general objectives for the course.
- Complete the pre-test.

UNIT 1 Course Overview, Ice Breaker and Ground Rules

After completing Unit 1, participants will be able to:

- Describe the structure and organisation of the course.
- Identify the ground rules for the course.
- Acquaint themselves with other participants in the course.
- Verbalise concerns about HIV/AIDS in the healthcare setting.
- State expectations for the course.
- State general objectives for the course.
- Complete the pre-test knowledge assessment.

OVERVIEW OF COURSE

Course Structure

The National Prevention of Mother-to-Child Transmission of HIV training is a comprehensive approach to the basic training of healthcare workers. The components, teaching methods and modules in this package are as follows:

Components

The components in this package include the following:

- Trainer Manual
- Participant Manual
- Presentation Booklet (PowerPoint presentations)
- Pocket Guide
- Wall Chart

Teaching Methods

Teaching methods include the following:

- Interactive lectures
- Interactive exercises
- Case studies
- Demonstrations and Role Plays
- Large and small group discussions
- Small group work
- Field Visit and Clinical Practicum

Modules

The course consists of eight modules designed for a 7-day facilitator-led course.

Module 1: Introduction to HIV/AIDS

Unit 1: Overview of the HIV/AIDS Pandemic

Unit 2: Scope of the National HIV/AIDS Epidemic

Unit 3: Basic Facts about HIV/AIDS

Unit 4: Transmission and Natural History of HIV

Module 2: Overview of HIV Prevention in Mothers, Infants and Young Children

Unit 1: Mother-to-Child Transmission of HIV Infection

Unit 2: Comprehensive Approach to Prevention of HIV Infection in Infants and Young Children

Unit 3: Role of Reproductive and Child Health Services in the Prevention of HIV Infection in Infants and Young Children

Module 3: Stigma and Discrimination Associated with HIV/AIDS

Unit 1: Introduction to Stigma and Discrimination and International Human Rights

Unit 2: Effects of HIV/AIDS-related Stigma and Discrimination

Unit 3: Reducing HIV/AIDS-related Stigma and Discrimination in PMTCT Programmes

Module 4: Counselling and Testing

Unit 1: Overview of HIV/AIDS Counselling

Unit 2: Counselling and Testing for PMTCT

Unit 3: Pre-Test Information and Counselling

Unit 4: Post-Test Information and Counselling

Unit 5: HIV Testing

Module 5: Specific Interventions to Prevent MTCT

Unit 1: Implementation of Comprehensive ANC Services

Unit 2: Antiretroviral Prophylaxis and Treatment for the Prevention of MTCT

Unit 3: Optimal Management of Women in Labour and Delivery

Unit 4: Postpartum Management of Women and Infants

Module 6: Infant Feeding in the Context of HIV Infection

Unit 1: Overview of Global and National Infant-Feeding Guidelines

Unit 2: Infant-Feeding Options

Unit 3: Supportive Counselling for Safer Infant-Feeding Choices

Unit 4: Nutritional Considerations for the HIV-Positive Breastfeeding Mother

Module 7: Comprehensive Care and Support for Mothers and Families with HIV Infection

Unit 1: Follow-up Care and Support of the Mother with HIV Infection

Unit 2: Follow-up Care and Support of the Infant and Young Child Exposed to and Infected with HIV

Unit 3: Antiretroviral Treatment for HIV-Infected Women and Children

Unit 4: Community Linkages for Treatment, Care and Support Services for Mothers and Families

Module 8: Safe and Supportive Care in the Work Setting

Unit 1: Strategies to Prevent HIV Infection in the Healthcare Setting

Unit 2: Handling of Sharps, Contaminated Equipment and Other Materials

Unit 3: Managing Occupational Exposure to HIV

Unit 4: Supportive Care for the Caregiver

Course Objectives

The goal of the course is to build the capacity of healthcare workers to offer PMTCT services. The training offers participants the background to provide comprehensive care and support to HIV-infected women and implement integrated PMTCT services in health facilities to improve the quality of care to all women and their families. General course objectives are:

- To provide basic knowledge of HIV/AIDS and PMTCT services including HIV counselling and testing, ARV prophylaxis, safer obstetric practices and safer infant-feeding counselling.
- To facilitate the reduction of HIV-related stigma and discrimination by empowering healthcare workers to partner with community agencies and services.

- To develop the capability of healthcare workers to provide comprehensive and appropriate care and support for HIV-infected and affected women and children.
- To develop the capacity of healthcare workers to establish community-based linkages among individuals and groups, health facilities, communities, organisations and other agencies for continued care for HIV/AIDS patients.
- To familiarise participants with the logistics of PMTCT programme implementation, monitoring and evaluation.

Course Design and Implementation

This course reviews the knowledge, practical skills, and professional competencies for healthcare workers in PMTCT programmes. Participatory teaching methods will be applied. Competency-based training is different from traditional educational processes. It focuses on the specific knowledge, attitudes and skills needed to carry out a procedure or activity. This training requires that the trainer facilitate and encourage learning rather than serve in the more traditional role of instructor or lecturer. Trained healthcare providers will be expected to develop competency in the provision of core PMTCT services to women attending ANC clinics and labour and delivery services, and their children. For a comprehensive list of competencies, see Appendix 1.

The course is organised into modules with each module divided into units. Each module includes the introduction or purpose, objectives, content and learning experiences. The implementation of the course will apply the principles of adult and problem-based learning. The assessment of learner performance will be continuous through learner and facilitator feedback. In order to facilitate the learning process, notes covering each unit are also provided.

Target Group

Every setting that provides PMTCT services can maximise the effectiveness of their programmes by involving staff in specialised training and encouraging other healthcare workers to expand their existing knowledge. The design of the course assumes that participants are professional HCWs who are qualified and have experience working in Reproductive Child Health/Family Planning (RCH/FP) clinics, labour and delivery, and both the Paediatric and General wards, including Outpatient and Sexually Transmitted Infection (STI) clinics. HCWs include General Nurses, Nurse-Midwives, Doctors, Clinical Officers, Nutritionists, Social Workers/Counsellors, Laboratory staff, Pharmacy staff and Medical Health Information Officers who need to develop skills in the delivery of PMTCT services.

Hands-on clinical training is strongly recommended. When possible, additional onsite or offsite clinical training should occur—especially in HIV counselling and testing and infant-feeding counselling. Specialised training will greatly improve the capacity and confidence of healthcare workers to use their new knowledge in providing PMTCT services.

The knowledge and skills that participants bring to the course are important to the learning process. Participants are encouraged to share experiences and raise challenging issues that are presented at the work site.

The rapidly growing HIV/AIDS pandemic requires collaborative efforts to maximise the use of existing human resources and develop strengthened human capacity. Training is a key part of this strategy.

COURSE DURATION AND SCHEDULE

A sample syllabus for the course is presented below:

Course syllabus for National PMTCT Training Package

Day	Content
Day 1	Opening Opening Ceremony, Introductions, Course Overview and Pre-test
	Module 1 Introduction to HIV/AIDS
	Module 2 Overview of HIV Prevention in Mothers, Infants and Young Children
Day 2	Module 2 Overview of HIV Prevention in Mothers, Infants and Young Children (cont'd.)
	Module 3 Stigma and Discrimination Associated with HIV/AIDS
Day 3	Module 4 Counselling and Testing
Day 4	Module 5 Specific Interventions to Prevent MTCT
	Field Visit Field Visit to clinic
Day 5	Module 5 Specific Interventions to Prevent MTCT (cont'd.)
	Module 6 Infant Feeding in the Context of HIV Infection
Day 6	Module 6 Infant Feeding in the Context of HIV Infection (cont'd.)
	Module 7 Comprehensive Care and Support for Mothers and Families With HIV Infection
Day 7	Module 7 Comprehensive Care and Support for Mothers and Families With HIV Infection (cont'd.)
	Module 8 Safe and Supportive Care in the Work Setting
	Closing Closing the course, Post-test, Evaluations
As determined by Course Director	Practicum

Responsibilities of PMTCT Service Providers

The course offers healthcare workers (HCWs) basic information and introductory skills development in PMTCT in order to implement core PMTCT activities in an integrated manner. The HCW will be able to undertake the following responsibilities:

- Provide core PMTCT services.
- Facilitate the reduction of HIV-related stigma and discrimination.
- Provide comprehensive and appropriate care and support for HIV-infected and affected women and children.
- Establish community-based linkages among individuals and groups, health facilities, communities, organisations and other agencies for continued care of HIV/AIDS patients.
- Implement PMTCT programme logistics, monitoring and evaluation.

See Appendix 1 at the end of the Course Introduction for a listing of the competencies related to each of these responsibilities.

Certificate of Participation

The course participants will be awarded a certificate signed by MOHSW to acknowledge their participation in the National PMTCT Training.


Course Overview: Key Points

- The PMTCT training provides HCWs with basic knowledge and skills to deliver core PMTCT services.
- Hands-on clinical training will improve participants' capacity to transfer knowledge to practice.
- The training builds on the knowledge of the HCWs.
- The course is highly participatory and interactive.

Exercise 1: Determining the Ground Rules for the Course

Purpose	To develop and agree on a set of ground rules that will create an environment that facilitates learning.
Duration	15 minutes
Introduction	Participants will be asked what rules they would like to put into effect that will foster a conducive learning environment for the course duration.

Introduction Exercise 2: Exploring the concerns of providers of HIV care

Purpose	To create a safe and comfortable learning environment.
Duration	20 minutes
Advance Preparation 	<ol style="list-style-type: none"> 1. Participants will receive a note card to write their thoughts on. This note card will not be collected. 2. Spend a few minutes thinking about the following questions and then write responses on your card or paper. Volunteers will be asked to share their responses. <ul style="list-style-type: none"> ▪ Concerns: What concerns or worries do you have about taking care of women and children and families with HIV/AIDS? ▪ Expectations: What do you hope to learn from this course? ▪ Strengths: What three personal strengths do you bring to your work as a healthcare provider?

UNIT 2 Pre-Test Knowledge Assessment

After completing Unit 2, participants will be able to:

- Complete the pre-test knowledge assessment.

Exercise 3: Pre-Test	
Purpose	To assess participant knowledge before commencing the training course.
Duration	30 minutes
Instructions	<ul style="list-style-type: none">▪ A pre-test and a post-test will be offered in the course. The same set of questions will be distributed at the beginning and end of the course. The responses to the test will show whether the material and teaching methods have been successful.▪ The pre-test and post-test will be anonymous. The scores will be examined on a group level; there will not be any individual names on the test.▪ Select a 3-digit code that you will indicate on your pre-test. Remember this 3-digit code (write it somewhere on your manual) and use it again on the post-test.

APPENDIX 1 Competencies for PMTCT Healthcare Workers

Competencies for PMTCT Healthcare Workers
<p>To provide core PMTCT services:</p> <ul style="list-style-type: none"> ▪ HIV counselling and testing <ul style="list-style-type: none"> ▪ Provide HIV counselling and testing services in RCH/FP clinics and labour and delivery/post-natal wards ▪ Safer infant feeding <ul style="list-style-type: none"> ▪ Counsel mothers on safer infant feeding practices ▪ Demonstrate safer breastfeeding practices to mothers ▪ Advise women on early cessation of breastfeeding, formula feeding (if appropriate) and the introduction of nutritious complementary feeds ▪ Healthy living ▪ Provision of prophylaxis <ul style="list-style-type: none"> ▪ Provide ARVs, other drugs and supplements and instructions on their use for both mother and infants ▪ Safer obstetric procedures <ul style="list-style-type: none"> ▪ Prevent HIV infection and HIV-related complications in labour, delivery and in the postpartum period ▪ Provide care and support to women in labour through safer delivery practices. ▪ Provide care for the newborn ▪ Integrated care <ul style="list-style-type: none"> ▪ Provide packages of integrated care for HIV-infected women and their infants, e.g., psychosocial support, nutrition, family planning, OI prophylaxis and treatment
<p>To facilitate the reduction of HIV-related stigma and discrimination:</p> <ul style="list-style-type: none"> ▪ Advocate for PMTCT services at the health facility, community and national levels ▪ Educate individuals, groups and communities on care and support needs of HIV/AIDS patients ▪ Explain mitigating gender issues on HIV/AIDS ▪ Mobilise communities and identify resources for HIV/AIDS individuals ▪ Communicate and undertake preventive and control strategies for HIV/AIDS in community and healthcare settings

APPENDIX 1 Competencies for PMTCT Healthcare Workers *(continued)*

To provide comprehensive and appropriate care and support for HIV-infected and affected women and children:

- Assess needs of HIV/AIDS-infected and affected individuals
- Describe WHO criteria for HIV/AIDS diagnosis
- Make clinical diagnosis for HIV/AIDS
- Carry out laboratory diagnosis for HIV/AIDS
- Explain the principles for ARV therapy
- Prescribe and dispense antiretroviral (ARV) drugs for PMTCT
- Prevent and treat opportunistic infections
- Provide psychosocial support for HIV/AIDS patients
- Initiate and facilitate the activities of community support groups on HIV-related issues
- Promote safer infant feeding practices

To establish community-based linkages among individuals and groups, health facilities, communities, organisations and other agencies for continued care of HIV/AIDS patients:

- Establish follow-up plans for mother and baby including proper referral channels
- Develop collaboration and teamwork with stakeholders to promote PMTCT services at both the community and facility level

To implement PMTCT programme logistics, monitoring and evaluation:

- Understand the effect of HIV/AIDS in national development
- Design, develop and utilise ANC cards, registers and reporting forms for PMTCT
- Assess the quality of PMTCT activities
- Collect, analyse and use data in PMTCT services to monitor and evaluate interventions in both the health settings and in the community, and advise on appropriate action

Module 1 Introduction to HIV/AIDS



Total Module Time: 200 minutes (3 hours, 20 minutes)

MODULE OBJECTIVES

After completing the module, the participant will be able to:

- Describe the global effects of HIV/AIDS.
- Describe the effects of the national HIV/AIDS epidemic.
- Explain the difference between HIV and AIDS.
- Describe the transmission and natural history of HIV infection.
- Explain the WHO staging system of HIV/AIDS and how it applies in a clinical setting.

UNIT 1 Overview of the HIV/AIDS Pandemic

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Describe the global effects of HIV/AIDS.

Introduction

The HIV/AIDS pandemic remains a major public health problem worldwide, with devastating effects in sub-Saharan Africa. In 2006, approximately 63% of the estimated 39.5 million adults and children living with HIV were from sub-Saharan Africa (24.7 million). During 2006, almost three quarters of all adult and child deaths due to AIDS occurred in sub-Saharan Africa: 2.1 million of the global total of 2.9 million. However, the most striking increases in people living with HIV, from 2004 to 2006 have occurred in East Asia, Eastern Europe and Central Asia.

Worldwide, the majority of the people living with HIV/AIDS are aged 15 to 49 years. Women comprise an estimated 59% of adults living with HIV south of the Sahara. Estimates from the UNAIDS 2006 report indicate that 2 million people living with HIV were children less than 15 years old, and this number continues to rise. Approximately 90% of these children live in sub-Saharan Africa.¹

Heterosexual transmission is the most common way this virus spreads in developing countries, resulting in large numbers of HIV-infected women of childbearing age. The paediatric HIV epidemic is largely the result of transmission from mother-to-child (MTCT).

The high prevalence of MTCT of HIV is threatening to reverse the gains of the child survival strategy on the African continent. The effect of HIV/AIDS has been felt in virtually all aspects of life of the individual, the family and the community in Africa.

The following units present basic facts about HIV/AIDS including the state of the epidemic, modes of transmission and the natural history of HIV infection.

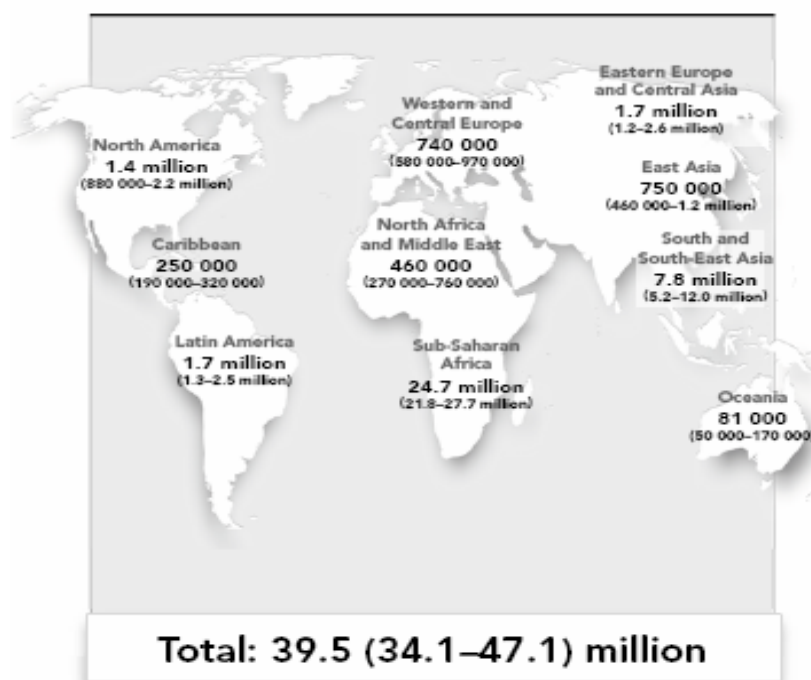
Definitions

HIV Prevalence: Number of people with HIV at any given time or over a set period of time.

HIV Incidence: Number of people newly infected with HIV over a set period of time.

¹ UNAIDS. 2006 Report on the global AIDS epidemic UNAIDS: Geneva.

Figure 1.1: Adults and Children Estimated to be Living with HIV, 2006



Source: UNAIDS. 2006 AIDS Epidemic Update

Global Effects of HIV/AIDS

The global effect of the HIV/AIDS pandemic is especially severe in resource-constrained settings and results in the following:

- Slowdown in economic development
- Overwhelmed healthcare systems
- Reduction in life expectancy
- Reduction in child survival rates
- Increasing number of orphans

Effects on Individuals

- Illness and suffering
- Shortened life span
- Loss of work and income
- Death of family members
- Grief, poverty and despair
- Barriers to receiving health care, including stigma and discrimination
- Worsening child health and survival
- Weakened support within family

Effects on Families

- Weakened integrity and support structure of family unit
- Burden of nursing care
- Poverty
- Break in children's schooling, training and rights
- Death of parents
- Orphans

Effects on Children

- Children are orphaned
- Lack of parental care
- Child-headed families

UNAIDS estimates that at the end of 2006:

- 2.3 million people living with HIV/AIDS were children younger than 15 years old.
- 530,000 children worldwide were newly infected.
- 380,000 children under 15 years died of AIDS in 2006.

Mother-to-Child Transmission of HIV

Mother-to-child transmission (MTCT) of HIV is responsible for more than 90% of childhood HIV infections worldwide. Because of the large number of women of reproductive age living with HIV/AIDS, decreasing the transmission of HIV from mother-to-child continues to be a challenge. The numbers of infections in children will likely increase if urgent measures to prevent transmission are not put in place. MTCT can take place during pregnancy, labour and delivery, and breastfeeding. Mothers and pregnant women need to know that there is a 20-45% risk of HIV transmission from infected mothers to their children without intervention.

In sub-Saharan Africa, the HIV epidemic in children is reversing the gains in child health and survival and has made caring for HIV-infected children costly for families and health systems. In many of these countries, one-third of paediatric hospital admissions are related to HIV/AIDS. Prevention efforts can slow the spread of HIV. However, pregnant women in countries heavily affected by HIV/AIDS often do not have access to services aimed at preventing mother-to-child transmission (PMTCT) of HIV. PMTCT programmes and other vital comprehensive care and treatment services must be extended as a matter of urgency.

Responding to the Epidemic

Reducing the incidence of HIV infection, particularly in children, requires targeting the general population, especially women of reproductive age; offering counselling and testing; offering supportive family planning services to prevent unintended pregnancies among HIV-infected women; providing interventions during pregnancy, labour and delivery, and in the postpartum period, specifically around infant-feeding practices, and finally, following up of the HIV-exposed infant until status is confirmed.

In addition, a PMTCT programme must reach women across the country, promote compliance and provide sufficient follow-up. To help make this happen, it is essential to address the needs of HCWs, including gaps in knowledge, attitudes and practice about preventing mother-to-child HIV transmission.

This national PMTCT training is designed to address this urgent need by providing material for the training of HCWs in PMTCT and comprehensive HIV/AIDS care.

UNIT 2 Scope of the National HIV/AIDS Epidemic

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Describe the effects of the national HIV/AIDS epidemic.

HIV/AIDS Situation in Tanzania

The first cases of HIV/AIDS in Tanzania were reported in 1983 in the Kagera region^{2,6}. By 1985, there were an estimated 140,000 people living with HIV/AIDS (1.3% prevalence) and by 1990, about 900,000 (7.2% prevalence). In 2004, 1.8 million people in the age group 0-49 years were estimated to be living with HIV/AIDS. An estimated 7% of adults ages 15-49 were infected with HIV. Best estimates suggest that rural HIV prevalence is 2% lower than the national average and about half the urban HIV prevalence.³ AIDS-related morbidity and mortality among adults are steadily increasing. HIV prevalence is slightly higher among women than men. 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 59,000 children below 15 years of age are living with HIV. An estimated 90% of these may have acquired the infection through MTCT.

According to the Tanzania HIV indicator survey (2003-2004)

- Although 80% of the Tanzanian population lives in rural areas, HIV infection rates are concentrated in urban settings (11% compared to about 5% in rural areas).
- Prevalence among urban women is 12%, compared with 6% for rural women.
- Prevalence among urban men is 10%, compared with 5% for rural men.
- Women are most vulnerable between the ages of 15 and 29.
- A much higher proportion of HIV-infected patients was recorded among TB patients.

HIV/AIDS is 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 (2003-2006)* is intended to consolidate interventions that will prevent HIV infections and reduce the risk of vulnerability to HIV among the Tanzanian population. All those who are infected and affected will receive treatment, care and support.

² The Kaiser Family Foundation. October 2005. HIV/AIDS Policy Fact Sheet: United Republic of Tanzania.

³ WHO. June 2005. Summary Country Profile for HIV/AIDS Treatment Scale-Up.

Table 1.1 Tanzania HIV Statistics and Features⁴

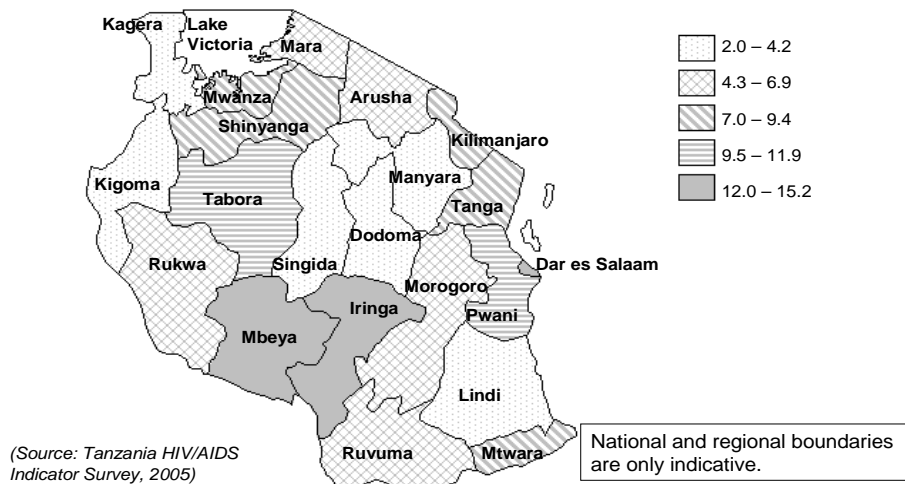
DEMOGRAPHIC DATA	TOTAL NUMBER ESTIMATE	DATE	SOURCE
Total population (millions)	37.7	2004	United Nations
Population in urban areas (%)	34.9	2003	United Nations
Life expectancy at birth (years)	46.5	2002	WHO
Gross domestic product per capita (US\$)	267	2002	IMF
Government budget spent on health	13	2002	WHO
Per capita expenditure on health (US\$)	12	2002	WHO
Human Development Index	0.407	2002	UNDP
HIV INDICATORS	TOTAL NUMBER ESTIMATE	DATE	SOURCE
Adult Prevalence of HIV/AIDS (15-49 years)	6.4% - 11.9%	2003	WHO/UNAIDS
Estimated number of people living with HIV/AIDS (0-49 years)	1,200,000 – 2,300,000	2003	WHO/UNAIDS
Estimated percent of young women living with HIV/AIDS ⁵	4%	2003, 2005	TACAIDS, NACP
Estimated percent of young men living with HIV/AIDS ⁷	3%	2003, 2005	TACAIDS, NACP
Reported number of people receiving antiretroviral therapy (15-49 years)	8300	June 2005	Ministry of Health
Estimated total number needing antiretroviral therapy in 2004	263,000	Dec 2004	WHO/UNAIDS
HIV testing and counselling sites	521	2004	Ministry of Health
HIV testing and counselling sites: number of people tested at all sites	227,973	2004	Ministry of Health
Prevalence of HIV among adults with tuberculosis (15-49 years)	33.8%	2002	WHO
Estimated number of AIDS orphans ⁷	980,000	2003	WHO/UNAIDS

⁴ WHO. June 2005. Summary Country Profile for HIV/AIDS Treatment Scale-Up.

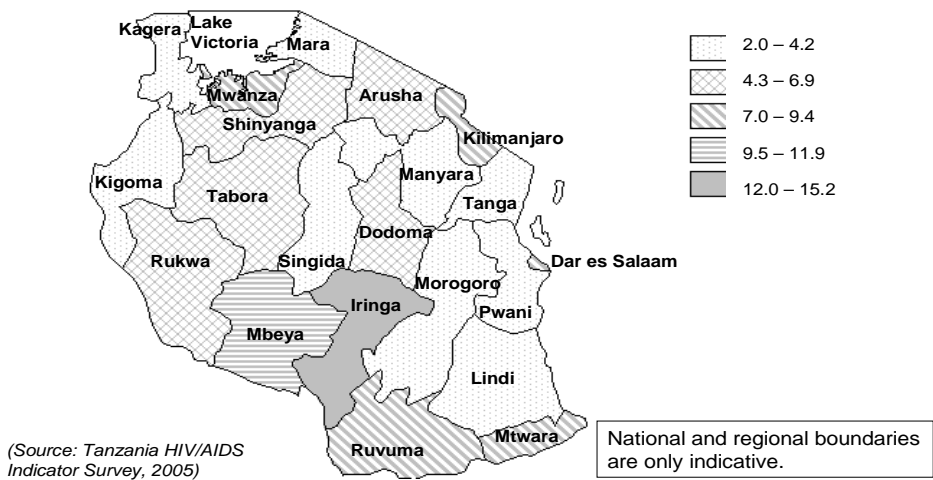
⁵ The Kaiser Family Foundation. October 2005. HIV/AIDS Policy Fact Sheet: United Republic of Tanzania.

Figure 1.2 Regional HIV and AIDS Statistics and Features

HIV prevalence in Women (15-49 years), Tanzania (2003-04)



HIV prevalence in Men (15-49 years), Tanzania (2003-04)



Gender and HIV

Both men and women are vulnerable to HIV infection; however, African women are at least 1.3 times more likely to be infected with HIV than men. In 2006, 17.7 million women worldwide were living with HIV, which is one million more than in 2004. More than thirteen million of those women live in sub-Saharan Africa.

Table 1.2: Regional HIV statistics and features for women, 2004 and 2006

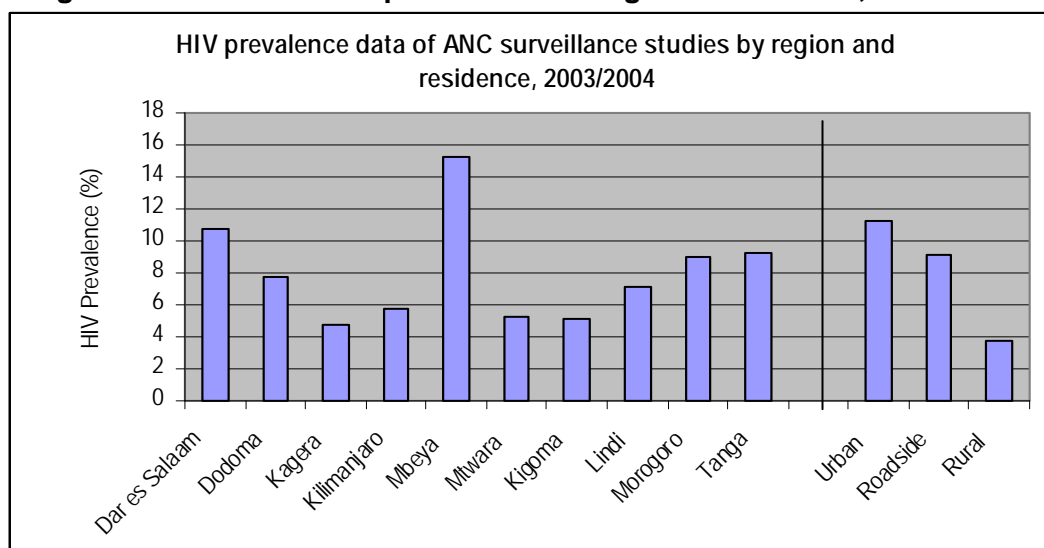
		Number of women (15+) living with HIV	Percent of adults (15+) living with HIV who are women (15+) (%)
Sub-Saharan Africa	2006	13.3 million [11.5–15.2 million]	59
	2004	12.7 million [11.0–14.5 million]	59
Middle East and North Africa	2006	200 000 [100 000–370 000]	48
	2004	180 000 [89 000–330 000]	49
South and South-East Asia	2006	2.2 million [1.3–3.6 million]	29
	2004	2.0 million [1.2–3.3 million]	29
East Asia	2006	210 000 [110 000–370 000]	29
	2004	160 000 [90 000–280 000]	27
Oceania	2006	36 000 [17 000–90 000]	47
	2004	32 000 [16 000–81 000]	47
Latin America	2006	510 000 [350 000–800 000]	31
	2004	450 000 [310 000–670 000]	30
Caribbean	2006	120 000 [85 000–160 000]	50
	2004	110 000 [80 000–150 000]	50
Eastern Europe and Central Asia	2006	510 000 [330 000–810 000]	30
	2004	410 000 [260 000–650 000]	30
Western and Central Europe	2006	210 000 [160 000–300 000]	28
	2004	190 000 [140 000–260 000]	28
North America	2006	350 000 [190 000–570 000]	26
	2004	300 000 [160 000–510 000]	26
TOTAL	2006	17.7 million [15.1–20.9 million]	48
	2004	16.5 million [14.2–19.5 million]	48

Source: UNAIDS, 2006 AIDS Epidemic Update

Of all adults (15+ yrs) living with HIV in sub-Saharan Africa, approximately 59% are women. The increase in the proportion of women being affected by the epidemic continues. The widening impact on women is apparent also in the Caribbean. (UNAIDS, 2006 AIDS Epidemic Update).

Figure 1.3 below is an example of the results of HIV seroprevalence studies among pregnant women in Tanzania that show the extent of the epidemic.

Figure 1.3: Trends in HIV prevalence among ANC attendees, Tanzania



Source: Ministry of Health/Tanzania Mainland: National AIDS Control Programme, HIV/AIDS/STI Surveillance Report, January – December 2004, Report Number 19, Issued October 2005

Gender differences in HIV infection have been attributed to several reasons. They include the biological fact that, in general, HIV is more easily transmitted from men to women than from women to men. Furthermore, sexual activity tends to start earlier for women and young women tend to have sex with older partners who are more likely to be HIV-infected than younger men.

Women are uniquely vulnerable to HIV infection due to:

- Inability of women and young girls to negotiate for safer sex
- Vulnerability to, and pressure from, male counterparts—many of whom have multiple partners
- Trauma and bleeding caused by sexual intercourse at an early age, a time of physical immaturity, which increases exposure to HIV infection
- Early marriages that expose young women to older men who may be HIV infected
- Forced sex through rape--a result of sexual abuse-- which increases risk of infection
- Economic pressures that force women to exchange sex for food, shelter and safety
- Lack of access to appropriate information on HIV/AIDS and STIs
- Peer pressure
- Socio-cultural factors such as polygamy, wife inheritance and female genital mutilation
- Failure to seek proper care for HIV and other STIs as a result of lack of knowledge or power to make decisions

Society and culture also influence the sexual behaviour of *men*. Common risks for HIV infection in men include:

- Failure to seek proper care for HIV and other STIs as a result of lack of knowledge, lack of comfort in healthcare settings, and/or stigma
- Cultural acceptance of having multiple sexual partners
- Ego-driven behaviours to display their manhood, including drug and alcohol abuse that may lead to high-risk sexual practices
- Peer pressure from other young men to conform to unsafe sexual practices without regard for consequences

Youth, both male and female, are more vulnerable to HIV infection because of the following:

- Lack of adequate information on sexuality and their own development
- Lack of skill to negotiate delay of first sexual experience
- Multiple sexual partners
- Incorrect and inconsistent use of condoms
- Lack of skills to avoid substance use or safer substance use for those who are already abusing substances
- Limited access to youth-friendly health services including voluntary counselling and testing (VCT), testing and treatment of sexually transmitted infections (STIs)

Effect of Gender Bias on PMTCT

HIV/AIDS affects all members of the family, no matter which sex; however, the effect of HIV infection is often unevenly distributed between men and women. Some of the effects include:

- Women may be subject to stigma, abandonment and discrimination once identified as HIV-infected and may be unfairly blamed for the spread of HIV.
- PMTCT during pregnancy, labour and delivery or through breastfeeding requires consistent support and the use of specific interventions to minimize transmission risk.
- Women are usually the caregivers in families, even if they themselves are sick. The burden of being sick and caring for others deprives women of their quality of life and valuable time for meeting the needs of other family members. Often a young woman is removed from school to care for her sick relative.
- Coping with long-term care of family members takes a very heavy toll on women as they play the roles of caregivers, breadwinners and heads of families. Psychological, social and economic changes associated with AIDS-related deaths of family members add to the burden.

The influence of gender on the vulnerability to HIV infection is important to consider 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 of HIV infection 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. Involving the community in PMTCT activities is addressed in *Module 7: Comprehensive Care and Support for Mothers and Families with HIV Infection*.

Exercise 1.1 Epidemiology of HIV nationally: Interactive discussion	
Purpose	To hold a discussion about local epidemiology.
Duration	20 minutes
Instructions	The trainer will request that participants refer to the discussion of Tanzania's epidemiology in this module - pages 1-5, 1-6, and 1-7 and share thoughts on issues that are contributing to the HIV epidemic in Tanzania.

UNIT 3 Basic Facts about HIV/AIDS

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Explain the difference between HIV and AIDS.

Overview of HIV and AIDS

Definitions of HIV and AIDS

HIV stands for *human immunodeficiency virus*, the virus that causes AIDS.

H: Human
I: Immunodeficiency
V: Virus

- HIV breaks down the body's defence against infection and disease—the body's immune system—by infecting specific white blood cells. The result is a weak immune system.
- When the immune system becomes weak, the body loses its protection against illness.
- As time passes, the immune system is unable to fight the HIV infection and the person may develop serious and deadly diseases, including infections such as PCP and TB. These diseases are called opportunistic infections (OIs). Some types of cancers are also associated with HIV/AIDS, including Kaposi's sarcoma, lymphoma, and invasive cervical and anal cancer.

**When a person is infected with HIV, the person is known as “HIV-infected.”
“HIV-positive” is when a person who is HIV-infected tests positive for HIV.**

AIDS is an acronym for *acquired immune deficiency syndrome* and refers to the most advanced stage of HIV infection.

A: Acquired – (not inherited) to differentiate from a genetic or inherited condition
I: Immuno – the immune system
D: Deficiency – inability to protect against illness
S: Syndrome – a group of symptoms or signs that occur as a result of a given condition

- An AIDS diagnosis can be made on the basis of clinical symptoms and/or blood or laboratory tests.
- So far, there is no vaccine for HIV available.

Differences among HIV, HIV infection and AIDS

- HIV is the virus that weakens the immune system and can cause AIDS.
- The progression from initial infection with HIV to advanced AIDS varies from person to person and can take several months to up to 10 years or more.
- A diagnosis of advanced HIV infection or AIDS is based on a group of signs and symptoms of serious illnesses and opportunistic infections that develop once the immune system of an HIV-infected person becomes weak.

(See Appendix 1-B and 1-C for information about the World Health Organization [WHO] clinical staging systems for HIV infection.)

Types of HIV

Two of the types of HIV are: HIV-1 and HIV-2. Both types are transmitted the same way, and both are associated with similar opportunistic infections and AIDS. HIV-1 is more common worldwide and is the predominant type in East Africa. HIV-2 is found predominantly in West Africa, Angola, and Mozambique.

Differences between HIV-1 and HIV-2

HIV-2 seems to develop more slowly and to be milder than HIV-1. People infected with HIV-2 are less infectious in the early course of infection; and there is less risk of MTCT with HIV-2 than with HIV-1.

HIV groups and sub-types

HIV-1 is an adaptable, flexible virus that mutates readily. HIV-1 can presently be subdivided into 3 genetically different groups: the M- ("major") is the principal group with 10 subtypes. O- ("outlier") is the second group found mostly in West Africa, and the N- ("new") group found in Cameroon, makes up the third. Scientific studies have suggested that particular sub-types may spread more easily or are associated with specific modes of transmission.

UNIT 4 Transmission and Natural History of HIV

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the transmission and natural history of HIV infection.
- Explain the WHO staging system of HIV/AIDS and how it applies in a clinical setting.

Routes of HIV Transmission

HIV can be transmitted through sexual contact, blood, injection drug use, and from mother-to-child (also known as perinatal or vertical transmission).

Sexual contact

- Unprotected sexual intercourse (vaginal, oral or anal)
- Direct contact with HIV-infected body fluids such as semen and vaginal secretions

In Tanzania, the most common route of HIV transmission is through sexual contact, especially unprotected heterosexual intercourse.

Blood-to-blood transmission

- Transfusion with HIV-infected blood
- Direct contact with HIV-infected blood
- Use of knives, scalpels, needles, or any other sharp object that has been used previously on a person with HIV, to cut or pierce the body. This includes medical, ceremonial, religious or beautifying procedures in the community, healthcare facility or any other setting.
- Occupational exposure, for example, needle sticks, cuts, etc.

Drug use

- Injection of drugs or any other substance with needles or syringes used previously on or by an HIV-infected person.

Mother-to-child transmission (MTCT); also called perinatal/vertical transmission

- From mothers who are HIV-infected to their infants during pregnancy, labour and delivery, or breastfeeding.

Vulnerable persons at risk of HIV/AIDS infection

- Women of childbearing age
- Individuals with multiple sexual partners
- Babies born to high-risk parents
- People with other STIs
- Men who have sex with men
- Intravenous drug users
- Recipients of unsafe blood and blood products

HIV CANNOT be transmitted by:

- Coughing or sneezing
- Insect bites e.g., mosquitoes or bedbugs
- Touching or hugging
- Water or food
- Deep or superficial kissing
- Public baths/pools
- Toilets
- Shaking hands
- Working or going to school with a person who is HIV-infected
- Telephones
- Sharing cups, glasses, plates or other utensils
- Other items touched by people living with HIV/AIDS

Natural Course of HIV Infection

The immune system protects the body by recognizing and attempting to destroy:

- Infectious agents such as bacteria, viruses and parasites
- Abnormal cells
- Foreign objects — anything from splinters to transplanted organs

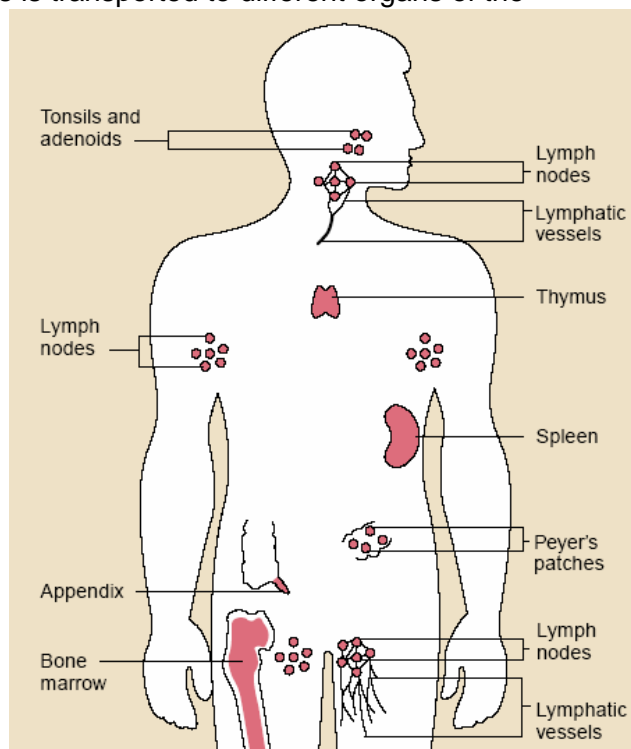
The HIV virus, when transmitted through sexual activity, can enter the bloodstream from mucous membranes that line the vagina, the urethral opening of the penis, rectum and mouth. Once in the circulatory system, the virus is transported to different organs of the immune system which are positioned throughout the body.

Figure 1.4 Organs of the immune system

The immune system contains lymphocytes, white blood cells that attack outside invaders. Typically, HIV enters and infects CD4 cells, a type of lymphocyte, which is responsible for coordinating the immune system response. The HIV virus reproduces quickly and can infect all of the organs of the immune system. HIV kills CD4 cells, which then compromises the body's ability to fight off infection.⁶

CD4 cells = T-lymphocyte cells (a type of white blood cell) in the immune system that protect against infections and coordinates the immune system's response to infection.

Source: US Dept. of Health & Human Services, National Institutes of Health, *Understanding the Immune System: How it Works*, NIH Sept. 2003, p. 4, available at: http://www.thebody.com/niaid/pdfs/immune_system.pdf



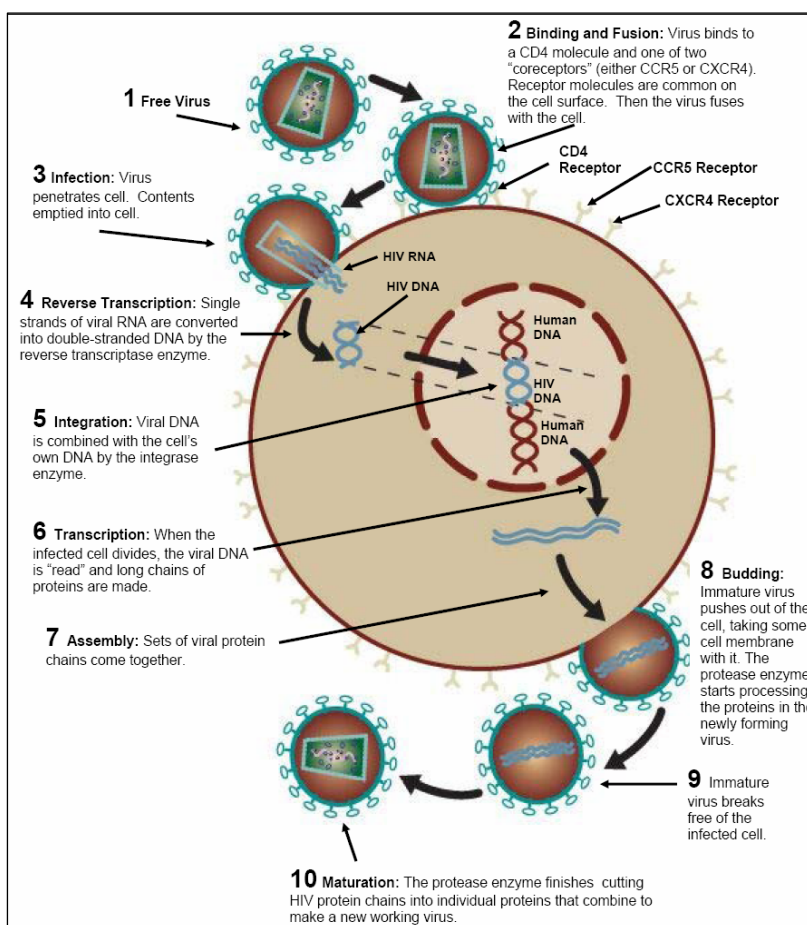
⁶ The Biology Project, The University of Arizona Friday, May 5, 2000. Available at: <http://www.biology.arizona.edu/IMMUNOLOGY/tutorials/AIDS/HIVimmune.html>

CD4 cell count and viral load

The **CD4 cell count** and **viral load** are two measures of the progression of HIV infection. When HIV multiplies, it infects and kills CD4 cells. The effects of HIV are often measured by a decline in the number of CD4 cells and the increase in HIV RNA copies, often called the viral load.

The CD4 cell count is the number of CD4 cells in the blood and reflects the “health” of the immune system. A normal CD4 cell count in a healthy adult is between 600 and 1200 cells/mm³ and varies according to age and health status. As the HIV infection progresses, the CD4 cell count drops. When the CD4 cell count of an adult falls below 200 cells/mm³, the risk of opportunistic infections is high. The CD4 cell count can also be used as a measure of response to ARV treatment.

Figure 1.5 HIV Life Cycle



Viral load is a measure of the amount of HIV in the bloodstream. It is usually measured by HIV ribonucleic acid polymerase chain reaction (HIV-RNA PCR). This test is also used as a marker of response to ARV treatment.

The viral load is very high shortly after primary or initial HIV infection (Fig. 1.6). The viral load then typically falls steeply once the body develops antibodies against HIV. If left untreated, the viral load rises steadily as it simultaneously invades, infects and then kills CD4 cells. If a person has a high viral load they can transmit HIV more easily. This is why HIV-negative women need to practise safe sex all of the time, and especially during pregnancy and breastfeeding to avoid being infected with

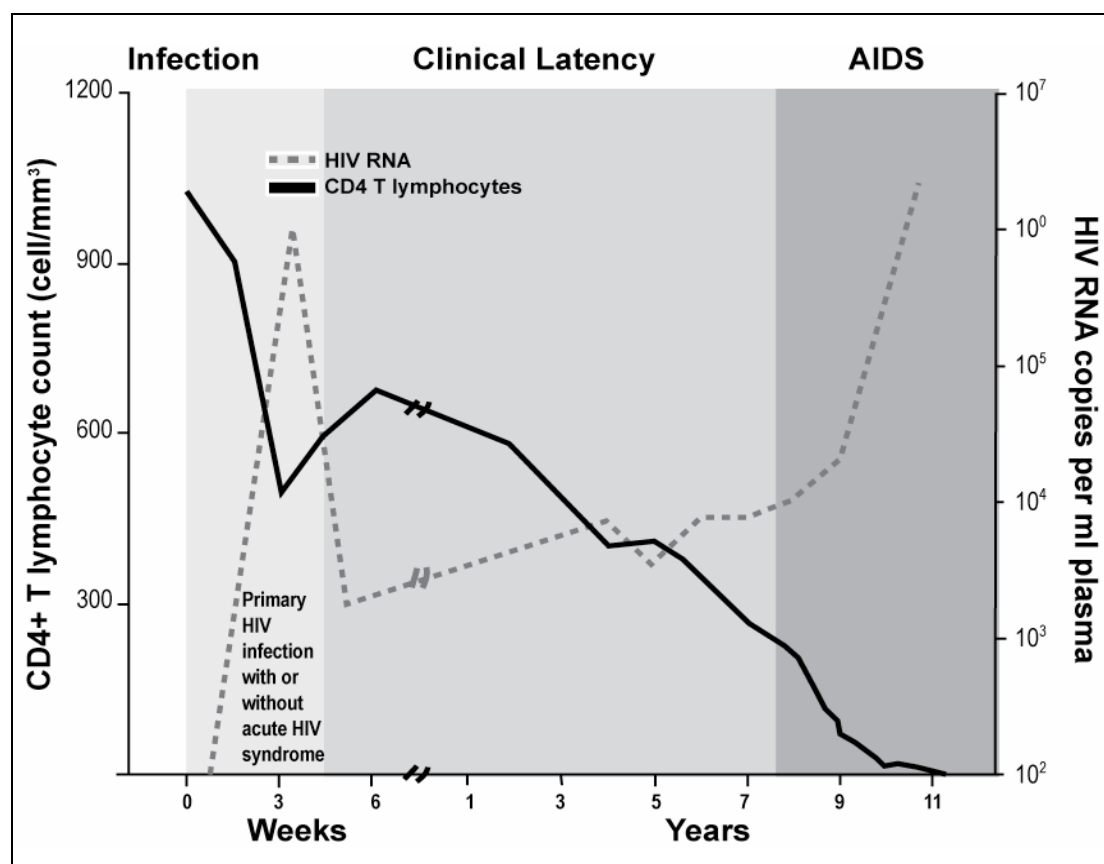
HIV and Source: AIDS Info Net, University of New Mexico School of Medicine, Fact Sheet Number 106. Available at <http://aidsinfo.net/factsheets/en/pdfs/106.pdf>

having a high viral load after primary infection. If a woman is infected with HIV during pregnancy or during the breastfeeding period, her chances of passing HIV to her child increase.

Opportunistic Infection (OI)

An *opportunistic infection* (OI) is an illness caused by an organism that might not cause illness in a healthy person, but will cause illness in a person who has a weakened immune system.

Figure 1.6 Characteristic viral load and CD4 cell count changes over time in HIV/AIDS



Source: Pantaleo, G, C Graziosi and A S Fauci. 1993. The immunopathogenesis of human immunodeficiency virus infection. *New England Journal of Medicine*, 328(5): 327-335.

Natural Course of HIV Infection

Seroconversion

DEFINITIONS

Seroconversion - when a person recently infected with HIV develops antibodies that can be measured using a laboratory test, seroconversion has occurred.

Window period - period of time between when a person is exposed and infected with HIV and when an antibody test result is positive.

People infected with HIV usually develop antibodies 4 to 6 weeks after being infected, but it may take as long as 3 months for antibodies to develop. The period of time between when a person is infected with HIV and when the antibody test result is positive is called the "window period."

As with other diseases, the presence of antibodies indicates the body has been exposed and is trying to fight off the illness. Unlike most diseases, having antibodies for HIV does not indicate protection but indicates infection.

When a person is recently infected with HIV, he/she develops antibodies against the virus. The process of developing the antibodies is called seroconversion. Some people may experience a flu-like illness with symptoms of fever, sore throat, rash, joint pains, and enlarged lymph nodes during the process of seroconversion. The collection of these

symptoms is also known as Acute Retroviral Syndrome (ARS). If HCWs recognize these symptoms in a person at high risk for HIV, it is important that they offer testing while the person is symptomatic and again 3 months after.

HIV testing detects antibodies associated with HIV in whole blood, saliva, or urine.

A person whose test results show HIV antibodies, and therefore HIV infection, is said to be seropositive or HIV-positive.

A person whose results do not show HIV antibodies—or infection—is said to be seronegative or HIV-negative. A person who tests HIV-negative but who has engaged in behaviour within the past three months that places him or her at risk for HIV should be tested again three months after the most recent possible exposure.

Asymptomatic HIV infection

In adults

A person who is HIV-infected but looks and feels healthy is *asymptomatic*. None of the physical signs or symptoms that indicate HIV infection are present.

Whether they have symptoms or not, people who are HIV-infected can still pass the virus to others.

The duration of the asymptomatic phase varies greatly from person to person. Some adults may develop symptoms of HIV as quickly as a few months after primary infection; others may take as long as 10 years or more to develop symptoms.

In children

Children infected with HIV have a shorter asymptomatic phase. A few infants who are HIV-infected will become ill within the first weeks of life. Most children start to develop symptoms before they are 2 years old; a few remain well for several years. However, many children die before they are diagnosed with HIV infection.

Symptomatic HIV infection

A person who has developed physical signs of HIV and reports symptoms related to HIV is *symptomatic*.

The immune system weakens and CD4 cell count decreases during this phase.

The progression of HIV depends on the type of virus and specific host characteristics including general health, nutrition, and immune status. (The 'host', in this case, is the human body, person, who is infected. Since HIV is a virus, it cannot live on its own; it needs to live in the human CD4 cell.)

Staging systems for HIV

World Health Organization (WHO) clinical staging system for HIV/AIDS

The WHO clinical staging system is based on clear clinical markers and is designed for use in resource constrained settings where diagnostic technology may be lacking. The staging system groups HIV progression for adults and adolescents into four clinically relevant stages—Clinical Stages 1 to 4—that correspond to the natural course of HIV infection (See Appendix 1-B). The clinical staging system for infants and children contains four stages (See Appendix 1-C).

Staging systems for HIV can:

- Guide the care of individuals who are HIV-infected.
- Provide a framework for follow-up and management.

- Help assess treatment outcomes.
- Help define prognosis and guide patient counselling.
- Assist in evaluating new treatments.
- Provide criteria for diagnosing HIV/AIDS in the absence of laboratory testing.

Exercise 1.2 The WHO Clinical Staging System: Group discussion	
Purpose	To practise using the WHO clinical staging system.
Duration	30 minutes
Instructions	The trainer will ask for a volunteer to read the Case Study below to the group. The trainer will then pose a series of questions that relate to staging the client at various points in her disease progression. The discussion will take place with the large group.
Activity	<p>Exercise 1.2 Case Study</p> <p>Maria is 25 years old and her work is selling clothes in a store. She meets a man whom she likes very much. He is handsome, funny, and 6 years older than she. He has a job that frequently takes him travelling to Arusha. He is unaware that he has been living with HIV for 3 years. He and Maria became a couple and are having unprotected sex. A month after the relationship started, Maria misses work due to the flu. She also has fever, swollen glands, and complains of joint pain. Her sister is a nurse, and they often have conversations about HIV. Maria decides to be tested. -----</p> <p>A year later, Maria becomes pregnant by this partner. She has been attending an ANC clinic and getting HIV information on PMTCT for some time. Group education and individual counselling regarding HIV and safe motherhood includes HIV testing as a part of routine antenatal care. Maria consents and her rapid test is positive. Maria is surprised because she feels fine. -----</p> <p>Several years later, Maria begins to have health problems. She loses a little weight over a few months and has complaints of “skin allergies” and persistent vaginal candidiasis. Her colds and coughs are more frequent. -----</p> <p>It is now two years later, and Maria has not been feeling well. She has chronic diarrhoea for more than one month. She still works, but feels tired most of the time. She now weighs 60 kgs, down from 75 kgs within the past 9 months. She does not keep any of her appointments at the CTC. -----</p> <p>A year later, Maria’s condition becomes worse. She can no longer work and cannot get out of bed. She can no longer care for her child. She continues to lose weight no matter what she eats. She still suffers from diarrhoea. She also complains of persistent night sweats. She is taken to the CTC and her CD4 count is 70.</p>

Exercise 1.3 HIV knowledge: Interactive game	
Purpose	To review basic and advanced HIV/AIDS information
Duration	50 minutes
Instructions	<ul style="list-style-type: none"> ▪ Refer to the questions for Exercise 1.3 (Appendix 1-D on page 1-25) ▪ The participants will be divided into teams, and one member of each team will record the team's answers on the sheet provided. ▪ A team will be asked to choose a question from one of seven categories and answer it in 10 seconds. If the answer is correct, the team will be credited for a proper response. If the answer is not correct, the question will be passed on to the next team. ▪ A question that has already been answered cannot be chosen. ▪ The first team to correctly answer 6 questions from 6 different categories wins.

Module 1: Key Points

- HIV/AIDS is a global pandemic.
- The number of people living with HIV worldwide continues to increase.
- As of 2004, HIV prevalence in Tanzania is estimated at 7% of adults aged 15–49.
- Women of childbearing age are at particular risk for acquiring HIV.
- HIV infection may be transmitted from a pregnant woman to her baby.
- Risk of mother-to-child transmission of HIV can be greatly reduced through effective PMTCT programmes.
- HIV is a virus that destroys the immune system, leading to opportunistic infections and AIDS.
- CD4 cell count and viral load are two measures that indicate the progression of HIV.
- Antiretroviral (ARV) drugs can slow the progression of HIV to AIDS.
- Without ARV treatment, HIV progresses to symptomatic disease and AIDS.
- The period of time between when a person is infected with HIV and when the antibody test result is positive is called the "window period".
- The disease progression of HIV infection can be monitored and managed through direct observation of clinical signs and symptoms in settings where laboratory tests are not available.

APPENDIX 1-A Regional HIV and AIDS Statistics and Features 2004 and 2006

	Adults and children living with HIV	Adults and children newly infected with HIV	Adult (15–49) prevalence (%)	Adult and child deaths due to AIDS
Sub-Saharan Africa				
2006	24.7 million [21.8–27.7 million]	2.8 million [2.4–3.2 million]	5.9% [5.2%–6.7%]	2.1 million [1.8–2.4 million]
2004	23.6 million [20.9–26.4 million]	2.6 million [2.2–2.9 million]	6.0% [5.3%–6.8%]	1.9 million [1.7–2.3 million]
Middle East and North Africa				
2006	460 000 [270 000–760 000]	68 000 [41 000–220 000]	0.2% [0.1%–0.3%]	36 000 [20 000–60 000]
2004	400 000 [230 000–650 000]	59 000 [34 000–170 000]	0.2% [0.1%–0.3%]	33 000 [18 000–55 000]
South and South-East Asia				
2006	7.8 million [5.2–12.0 million]	860 000 [550 000–2.3 million]	0.6% [0.4%–1.0%]	590 000 [390 000–850 000]
2004	7.2 million [4.8–11.2 million]	770 000 [480 000–2.1 million]	0.6% [0.4%–1.0%]	510 000 [330 000–740 000]
East Asia				
2006	750 000 [460 000–1.2 million]	100 000 [56 000–300 000]	0.1% [<0.2%]	43 000 [26 000–64 000]
2004	620 000 [380 000–1.0 million]	90 000 [50 000–270 000]	0.1% [<0.2%]	33 000 [20 000–49 000]
Oceania				
2006	81 000 [50 000–170 000]	7100 [3400–54 000]	0.4% [0.2%–0.9%]	4000 [2300–6600]
2004	72 000 [44 000–150 000]	8000 [3900–61 000]	0.3% [0.2%–0.8%]	2900 [1600–4600]
Latin America				
2006	1.7 million [1.3–2.5 million]	140 000 [100 000–410 000]	0.5% [0.4%–1.2%]	65 000 [51 000–84 000]
2004	1.5 million [1.2–2.2 million]	130 000 [100 000–320 000]	0.5% [0.4%–0.7%]	53 000 [41 000–69 000]
Caribbean				
2006	250 000 [190 000–320 000]	27 000 [20 000–41 000]	1.2% [0.9%–1.7%]	19 000 [14 000–25 000]
2004	240 000 [180 000–300 000]	25 000 [19 000–35 000]	1.1% [0.9%–1.5%]	21 000 [15 000–28 000]
Eastern Europe and Central Asia				
2006	1.7 million [1.2–2.6 million]	270 000 [170 000–820 000]	0.9% [0.6%–1.4%]	84 000 [58 000–120 000]
2004	1.4 million [950 000–2.1 million]	160 000 [110 000–470 000]	0.7% [0.5%–1.1%]	48 000 [34 000–66 000]
Western and Central Europe				
2006	740 000 [580 000–970 000]	22 000 [18 000–33 000]	0.3% [0.2%–0.4%]	12 000 [<15,000]
2004	700 000 [550 000–920 000]	22 000 [18 000–33 000]	0.3% [0.2%–0.4%]	12 000 [<15 000]
North America				
2006	1.4 million [880 000–2.2 million]	43 000 [34 000–65 000]	0.8% [0.6%–1.1%]	18 000 [11 000–26 000]
2004	1.2 million [710 000–1.9 million]	43 000 [34 000–65 000]	0.7% [0.4%–1.0%]	18 000 [11 000–26 000]
TOTAL				
2006	39.5 million [34.1–47.1 million]	4.3 million [3.6–6.6 million]	1.0% [0.9%–1.2%]	2.9 million [2.5–3.5 million]
2004	36.9 million [31.9–43.8 million]	3.9 million [3.3–5.8 million]	1.0% [0.8%–1.2%]	2.7 million [2.3–3.2 million]

Source: UNAIDS, 2006 AIDS Epidemic Update

APPENDIX 1-B WHO Clinical Staging of HIV/AIDS for Adults and Adolescents

WHO clinical staging of HIV/AIDS for adults and adolescents with confirmed HIV infection. To be used for persons ≥ 15 years of age.

Clinical Stage 1

- Asymptomatic
- Persistent generalized 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^a severe weight loss (>10% of presumed or measured body weight)
- Unexplained chronic diarrhoea for longer than one month
- Unexplained persistent fever (*above 37.5 C intermittent or constant, for longer than one month*)
- Persistent oral candidiasis
- Oral hairy leukoplakia
- Pulmonary tuberculosis
- Severe bacterial pneumonia (*such as pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, or bacteraemia*)
- Acute necrotizing ulcerative stomatitis, gingivitis, or periodontitis
- Unexplained anaemia (<8g/dl), neutropenia (<0.5 x 10⁹ per litre) and/or chronic thrombocytopenia (<50 x 10⁹ per litre)

Clinical Stage 4^b

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ HIV wasting syndrome ▪ Pneumocystis pneumonia ▪ Recurrent severe bacterial pneumonia ▪ Chronic herpes simplex infection (<i>orolabial, genital or anorectal of more than one month's duration or visceral at any site</i>) ▪ Oesophageal candidiasis (<i>or candidiasis of trachea, bronchi or lungs</i>) ▪ Extrapulmonary tuberculosis ▪ Kaposi's sarcoma | <ul style="list-style-type: none"> ▪ Cytomegalovirus infection (<i>retinitis or infection of other organs</i>) ▪ Central nervous system toxoplasmosis ▪ HIV encephalopathy ▪ Extrapulmonary cryptococcosis including meningitis ▪ Disseminated non-tuberculous mycobacterial infection ▪ Progressive multifocal leukoencephalopathy ▪ Chronic cryptosporidiosis ▪ Chronic isosporiasis |
|--|--|

APPENDIX 1-B WHO Clinical Staging of HIV/AIDS for Adults and Adolescents *(continued)*

WHO clinical staging of HIV/AIDS for adults and adolescents with confirmed HIV infection. To be used for persons ≥ 15 years of age

Clinical Stage 4 *continued*

- Disseminated mycosis (*extrapulmonary histoplasmosis or coccidiomycosis*)
- Recurrent septicaemia (*including non-typhoidal Salmonella*)
- Lymphoma (*cerebral or B-cell non-Hodgkin*)
- Invasive cervical carcinoma
- Atypical disseminated leishmaniasis
- Symptomatic HIV-associated nephropathy or symptomatic HIV-associated cardiomyopathy

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

^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).

For a description of the criteria for recognizing an HIV-related clinical event at each clinical stage, refer to the World Health Organisation's "WHO Case Definitions of HIV for Surveillance and Revised Clinical Staging and Immunological Classification of HIV-related Disease in Adults and Children" August, 2006.

APPENDIX 1-C WHO Clinical Staging of HIV/AIDS for Children

WHO clinical staging of HIV/AIDS 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
- 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

- Unexplained moderate malnutrition not adequately responding to standard therapy
- Unexplained persistent diarrhoea (*14 days or more*)
- Unexplained persistent fever (*above 37.5 intermittent or constant, for longer than one 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 bacterial pneumonia
- Symptomatic lymphoid interstitial pneumonitis
- Chronic HIV-associated lung disease including bronchiectasis
- Unexplained anaemia (<8 g/dl), neutropaenia (<0.5 x 10⁹ per litre) and/or chronic thrombocytopaenia (<50 x 10⁹ per litre)

APPENDIX 1-C WHO Clinical Staging of HIV/AIDS for Children (continued)

WHO clinical staging of HIV/AIDS for infants and children < 15 years of age with confirmed HIV infection

Clinical Stage 4^a

- Unexplained severe wasting, stunting or severe malnutrition not responding to standard therapy
- Pneumocystis pneumonia
- Recurrent severe bacterial infections (*such as empyema, pyomyositis, bone or joint infection or meningitis but excluding pneumonia*)
- Chronic herpes simplex infection (*orolabial or cutaneous of more one month's duration or visceral at any site*)
- Extrapulmonary tuberculosis
- Kaposi's sarcoma
- Oesophageal candidiasis (*or candidiasis of trachea, bronchi or lungs*)
- Central nervous system toxoplasmosis (*after one month of life*)
- HIV encephalopathy
- Cytomegalovirus infection: retinitis or cytomegalovirus infection affecting another organ, with onset at age older than one month
- Extrapulmonary cryptococcosis (including meningitis)
- Disseminated endemic mycosis (*extrapulmonary histoplasmosis, coccidiomycosis*)
- Chronic cryptosporidiosis
- Chronic isosporiasis
- Disseminated non-tuberculous mycobacteria infection
- Cerebral or B non-Hodgkin lymphoma
- Progressive multifocal leukoencephalopathy
- Symptomatic HIV-associated nephropathy or HIV-associated cardiomyopathy

^a 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.)

For a description of the criteria for recognizing an HIV-related clinical event at each clinical stage, refer to the World Health Organisation's "WHO Case Definitions of HIV for Surveillance and Revised Clinical Staging and Immunological Classification of HIV-related Disease in Adults and Children" August, 2006.

APPENDIX 1-D Questions and Answers for Exercise 1.3 HIV Knowledge: Interactive game

Category 1: HIV/AIDS Transmission

Question	Answer(s)
<p>1. List at least <u>three</u> ways in which HIV infection is transmitted.</p>	
<p>2. Two types of HIV are: HIV-1 and HIV-2. Name two ways in which HIV-2 is different from HIV-1.</p>	
<p>3. What is the major route of HIV transmission worldwide?</p>	
<p>4.</p> <p>a. What specific body system does HIV attack?</p> <p>b. What happens to this body system when HIV is introduced?</p>	

APPENDIX 1-D Questions and Answers for Exercise 1.3 HIV Knowledge: Interactive game *(continued)*

Category 2: Prevention

Question	Answer(s)
1. What are the ABCs of prevention (on an individual level)?	
2. Standard precautions are a set of practices designed to protect health workers and patients from infection. Name at least four interventions that are standard precautions.	

APPENDIX 1-D Questions and Answers for Exercise 1.3 HIV Knowledge: Interactive game *(continued)*

Category 3: Infant Feeding

Question	Answer(s)
<p>1. WHO defines exclusive breastfeeding as giving an infant only breast milk (including expressed breast milk), and no other liquids or solids with the exception of _____</p> <p>(Fill in the blank).</p>	
<p>2. List two reasons why cup feeding is favoured over bottle-feeding when the mother chooses replacement foods (rather than breastfeeding).</p>	
<p>3. At what age does WHO recommend starting a child on complementary foods (food in addition to milk)?</p>	
<p>4. Name two reasons why an HIV-infected woman may choose to breastfeed rather than give a breast milk substitute to her infant.</p>	

APPENDIX 1-D Questions and Answers for Exercise 1.3 HIV Knowledge: Interactive game *(continued)*

Category 4: Testing

Question	Answer(s)
1. What is specifically measured when an HIV rapid test is done?	
2. With regard to HIV testing, what does the "window period" mean?	
3. Name two advantages of the HIV rapid test (compared with the traditional ELISA test).	

APPENDIX 1-D Questions and Answers for Exercise 1.3 HIV Knowledge: Interactive game *(continued)*

Category 5: Mother-to-Child Transmission

Question	Answer(s)
<p>1. If 100 women who were HIV-infected gave birth to 100 infants, how many of the infants would become infected during <u>pregnancy</u>?</p>	
<p>2. If 100 women who were HIV-infected gave birth to 100 infants, how many of the infants would become infected during <u>delivery</u>?</p>	
<p>3. If 100 women who were HIV-infected gave birth to 100 infants, how many of these infants would become infected during <u>breastfeeding</u>?</p>	
<p>4. Name two maternal conditions that may increase the risk of HIV transmission during pregnancy.</p>	
<p>5. Name two things that may increase the risk of HIV transmission during breastfeeding.</p>	

APPENDIX 1-D Questions and Answers for Exercise 1.3 HIV Knowledge: Interactive game *(continued)*

Category 6: Comprehensive Care and Support for Mothers and Families with HIV

Question	Answer(s)
1. Name at least two activities that should be included in the first postpartum visit for the woman who is infected with HIV.	
2. Name one test that will tell you if an infant is infected with HIV.	
3. Name one symptom associated with HIV infection in the infant or child.	

APPENDIX 1-D Questions and Answers for Exercise 1.3 HIV Knowledge: Interactive game *(continued)*

Category 7: Prevention in Healthcare Settings

Question	Answer(s)
<p>1. Name one disinfectant that is capable of inactivating HIV.</p>	
<p>2. If a healthcare worker accidentally got stuck with a needle that had previously been used on a patient with HIV what would be the chance that he or she would become infected with HIV?</p> <p>A. <1%</p> <p>B. 5%</p> <p>C. 3%</p> <p>D. 20%</p>	
<p>3. What are two things that a healthcare worker can do when attending to a patient in the delivery room to reduce risk of occupational exposure to HIV?</p>	

APPENDIX 1-D Questions and Answers for Exercise 1.3 HIV Knowledge: Interactive game *(continued)*

Category 8: Wild Card (Variety of topics)

Question	Answer(s)
<p>1. AIDS is the _____ (choose number) cause of death in Africa?</p> <p>A. Number 1</p> <p>B. Number 2</p> <p>C. Number 3</p> <p>D. Number 4</p>	
<p>At the end of 2006, approximately how many people were living with HIV worldwide?</p> <p>A. About 20 million</p> <p>B. About 30 million</p> <p>C. About 40 million</p> <p>D. About 50 million</p>	
<p>2. In sub-Saharan Africa, women represent what percentage of adults (15+) living with HIV/AIDS?</p> <p>A. 78%</p> <p>B. 72%</p> <p>C. 59%</p> <p>D. 48%</p>	
<p>3. What is the difference between stigma and discrimination?</p>	
<p>4. What is the difference between monitoring and evaluation?</p>	

Module 2 Overview of HIV Prevention in Mothers, Infants, and Young Children



Total Module Time: 215 minutes (3 hours, 35 minutes)

MODULE OBJECTIVES

After completing the module, the participant will be able to:

- Describe mother-to-child transmission (MTCT) of HIV infection.
- Describe the four elements of a comprehensive approach to prevention of HIV infection in infants and young children.
- Provide information about prevention of HIV infection.
- Describe the role of reproductive and child health (RCH) services in the prevention of HIV infection in infants and young children and treatment of HIV in mothers and families.

UNIT 1 Mother-to-Child Transmission of HIV Infection

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Describe mother-to-child transmission (MTCT) of HIV infection.

Definition

PMTCT (prevention of mother-to-child transmission) is a commonly used term for programmes and interventions designed to reduce the risk of mother-to-child transmission (MTCT) of HIV.

Exercise 2.1 National terminology for HIV: Interactive discussion

Purpose	To share knowledge about the local terms used in HIV/AIDS prevention, care and treatment programmes.
Duration	20 minutes
Instructions	<ul style="list-style-type: none"> A volunteer from the group will discuss the risks of HIV transmission from a mother to her baby during pregnancy, labour and delivery, and when breastfeeding, just as he or she would explain these concepts to a patient. The trainer will lead a discussion on the words and concepts used locally that are useful and clear when working with pregnant women. Common words should be offered for important concepts such as window period, condom, HIV, virus, ARVs, replacement feeding, stigma, and disclosure.

Mother-to-child transmission of HIV

The overall MTCT rate is approximately 40% without intervention. The technical term for MTCT is vertical transmission or perinatal transmission. The majority of children infected with HIV acquire the virus through MTCT.

Use of the term MTCT attaches no blame or stigma to the woman who gives birth to a child who is HIV-infected. It does not suggest deliberate transmission by the mother, who is often unaware of her own infection status and unfamiliar with how the HIV virus is passed from mother to child. Rather, MTCT of HIV infection suggests that both the woman and her partner share in the responsibility.

MTCT can occur during:

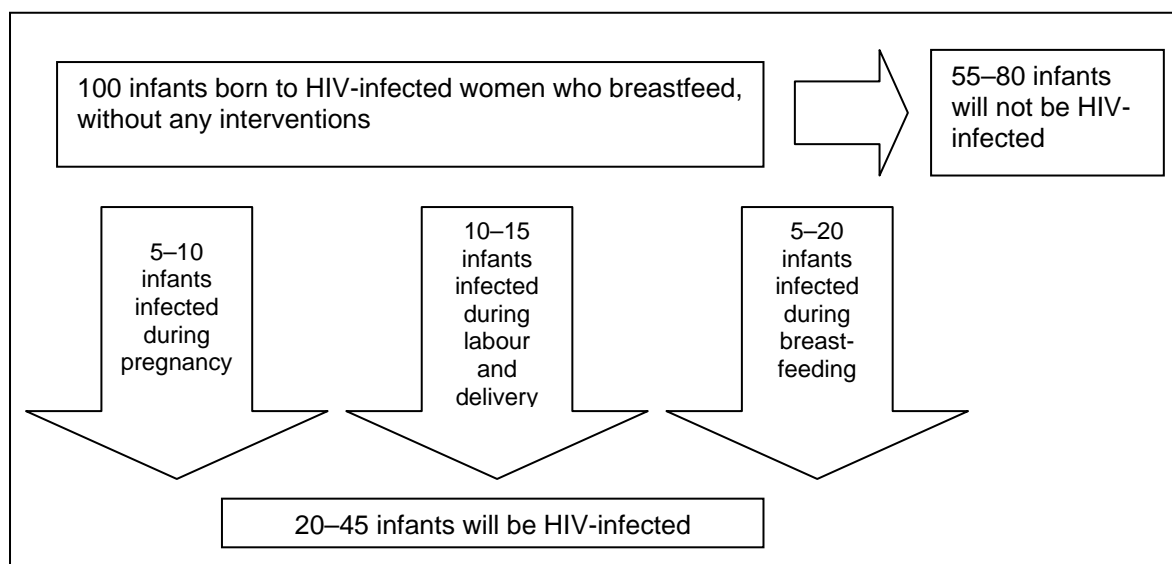
- Pregnancy
- Labour and delivery
- Breastfeeding

Risk of transmission without interventions

Most MTCT occurs during labour and delivery, but depending upon breastfeeding practices and duration, there is also substantial risk of HIV transmission to the infant during breastfeeding.

Figure 2.1 shows that without intervention, up to 45% of infants born to mothers infected with HIV who breastfeed can become HIV-infected.

Figure 2.1: Estimated HIV outcomes of infants born to women infected with HIV



Note: Figure 2.1 gives an overall picture of possible outcomes. There will be variability among different populations nationally.

Risk factors for transmission

- Viral load:
 - Transmission is higher when the mother's viral load is high, as is the case with advanced HIV infection (AIDS) or with a new HIV infection. High viral load in the mother's blood is reflected in high local viral loads in maternal cervico-vaginal secretions and breast milk.
- Viral strain:
 - Transmission rates differ with different strains of HIV. Transmission is higher with HIV-1 than with HIV-2.
- Viral resistance:
 - The presence of ARV-resistant strains of HIV can increase the risk of MTCT. If the HIV virus is resistant to certain ARV medications, the medications will not work as effectively to prevent MTCT.
- HIV transmission during labour and delivery occurs when the infant comes in contact with, ingests, or inhales maternal blood or cervico-vaginal secretions that contain HIV.
- The presence of STIs increases the risk of MTCT of HIV. Early identification and treatment of STIs in pregnant women can reduce MTCT of HIV.
- Other viral, maternal, obstetrical, foetal and infant factors, alone or in combination, influence MTCT of HIV infection. These are outlined in Table 2.1.
- PMTCT interventions are designed to address these risk factors.

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

Viral factors	Pregnancy	Labour and delivery	Breastfeeding
<p>Viral load: High maternal viral load and low CD4 count occurs in new HIV infection and with advanced AIDS</p> <p>Viral strain: Transmission is higher with HIV-1 than HIV-2. Different strains have different rates of transmission e.g., transmission is higher with C and E sub-groups.</p> <p>Viral resistance: ARV-resistant strains can increase risk of MTCT</p>	<p>High maternal viral load and low CD4 count (new or advanced HIV infection)</p> <p>Viral, bacterial, or parasitic placental infections, e.g., malaria</p> <p>Sexually transmitted infections (STIs)</p> <p>Antepartum haemorrhage</p>	<p>High maternal viral load in (new or advanced HIV infection)</p> <p>Rupture of membranes for more than 4 hours before delivery¹</p> <p>Invasive delivery procedures that increase contact with mother's infected blood or body fluids (e.g., episiotomy, artificial rupture of membranes, vacuum extraction delivery)</p> <p>Complicated deliveries (e.g., breech delivery and first infant in multiple births)</p> <p>Chorioamnionitis (from untreated STI or other infections)</p> <p>Preterm delivery</p> <p>Low birth weight</p> <p>Intrapartum haemorrhage</p>	<p>High maternal viral load (new infection or advanced AIDS)</p> <p>Duration of breastfeeding</p> <p>Mixed feeding (e.g., breastfeeding combined with other foods or fluids)</p> <p>Oral disease in the infant (e.g., thrush or mouth sores)</p> <p>Poor maternal nutrition status e.g., micronutrient and vitamin deficiencies.</p> <p>Breast abscesses, nipple fissures, mastitis</p>

¹ 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.

HIV and Pregnancy

Effect of pregnancy on HIV infection

- In pregnancy, the immune function is suppressed in both HIV-infected and non-infected women.
- Studies have shown that pregnancy does not seem to have an effect on the progression of HIV disease.

Effect of HIV on pregnancy

HIV-infected women experience more complications during pregnancy, delivery and postpartum period than women who are not infected with HIV. Pregnancy-related complications for women with HIV include:

- Increased risk of spontaneous abortions
- Double the rate of pre-term deliveries
- Increased risk of low birth weight (LBW) infant
- Increase in still births
- Increased risk of bacterial pneumonia, urinary tract infections and other illnesses
- Increase in postpartum infections

Because of this vulnerability, it is important that pregnant women with HIV get the best possible antenatal and postpartum care.

Table 2.2. Adverse pregnancy outcomes and relationship to untreated HIV Infection

Adverse pregnancy outcome	Relationship to HIV Infection
Spontaneous abortion	Evidence of possible increased risk
Stillbirth	Evidence of increased risk in developing countries
Perinatal/infant mortality	Evidence of increased risk in developing countries
Intrauterine growth restriction	Evidence of possible increased risk
Low birth weight (<2500 g)	Evidence of possible increased risk, especially with more advanced disease
Preterm delivery	Evidence of possible increased risk, especially with more advanced disease
Preeclampsia	No data
Transmission of HIV to infant	Evidence of increased risk
Chorioamnionitis	Most recent studies do not suggest an increased risk in clinical or histologic chorioamnionitis; however, evidence of possible increased risk in developing countries
Fetal malformation	No evidence of increased risk

Adapted From: US Department of Health and Human Services; HIV/AIDS Bureau. Publications: A Guide to the Clinical Care of Women with HIV/AIDS, 2005 edition available at: <http://hab.hrsa.gov/publications/womencare05/WG05chap7.htm#WG05chap7f> Dept of health and human services

UNIT 2 Comprehensive Approach to Prevention of HIV Infection in Infants and Young Children

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the four elements of a comprehensive approach to prevention of HIV infection in infants and young children.
- Provide information about prevention of HIV infection.

Four elements in a comprehensive approach to PMTCT

- **Element 1:** Prevention of primary HIV infection, including the ABC approach.
- **Element 2:** Prevention of unintended pregnancies among women infected with HIV.
- **Element 3:** Prevention of HIV transmission from women infected with HIV to their infants.
- **Element 4:** Provision of treatment, care and support to women infected with HIV, their infants and their families.

Access to comprehensive Reproductive and Child Health (RCH) services (i.e., antenatal, postpartum and child health services) is central to efforts to reduce HIV infection in infants and young children. The following units provide more detail on the specific elements of the comprehensive approach.

Element 1: Prevention of primary HIV infection

Since there is no cure for HIV/AIDS, prevention of primary HIV infection is the most effective means of controlling the spread of HIV. Preventing HIV infection can reduce the impact of the epidemic on individuals, families and communities.

Decreasing the number of mothers infected with HIV is an effective way to reduce MTCT. HIV infection will not be passed on to children if their parents-to-be are not infected with HIV. Primary prevention is the key to reversal of the epidemic.

Most people nationally are not infected with HIV; efforts need to be stepped up to ensure that they remain uninfected. Attention should also be directed to ensure that HCWs and other caregivers who are not infected do not become infected while providing care and support to those who are living with the virus.

Prevention Strategies

Safer and responsible sexual behaviour and practices

Safer and responsible sexual behaviour and practices include, as appropriate, delaying the onset of sexual activity, practising abstinence, reducing the number of sexual partners and serial marriages, and using condoms. Patients should be encouraged to use all three approaches to reducing the transmission of HIV.

This approach has come to be known as the “ABC” approach.

A = Abstinence—Refrain from having sexual intercourse.

- Delay of sexual debut by young people.

B = Be faithful—Be faithful to one partner not infected with HIV.

- Neither partner has HIV.
- Neither partner is at risk of HIV from other sources of infection like outside sexual partners.
- Partners are faithful to one another at all times.
- Avoid sex with strangers or casual partners.

C = Condom use—Use condoms correctly and consistently.

This approach also implies that partners will negotiate with each other for safer sex:

- With a focus on safety.
- Without implying lack of trust.
- Without blaming or being punitive.

Recent reports of increasing numbers of new HIV infections transmitted from husbands to wives indicate a continued need to educate men and women about safer sex practices and other behaviour changes. For example, being faithful to one partner not HIV-infected is a partner-reduction behaviour that has proven significant in slowing the spread of HIV infection.

Behaviour change communication (BCC) efforts aim to change the behaviours that place individuals at risk for becoming HIV-infected or spreading HIV infection. BCC recognizes that behaviour change is not simply a matter of increased knowledge. Many factors, including family and communities, influence change. BCC attempts to create a household, community and health facility environment in which individuals can modify their behaviour to decrease risk.

Especially among young women, the successful implementation of the “ABCs” outlined above may require support from organized programs. Women are often not able to negotiate safer sex practices or condom use with their partners. Healthcare workers can help women address these challenges through counselling, education and community linkages.

There are multiple cultural and traditional factors that affect the spread of HIV among women.

- Early marriages
- Poverty and lack of employment
- High divorce rates and remarrying, which increase exposure to multiple partners
- Lack of sex education for adolescents
- Traditional male attitudes about sex
- Coercion by men who have multiple sex partners

Provide access to condoms

Condoms can help prevent HIV transmission when used correctly and consistently, especially in high-risk settings. Programmes that promote condom use for HIV prevention should also focus on condom use for PMTCT.

Provide early diagnosis and treatment of STIs

The early diagnosis and treatment of STIs can reduce the incidence of HIV in the general population by about 40%. STI treatment services present an opportunity to provide information on HIV infection, MTCT and referral for counselling and testing.

Make HIV counselling and testing widely available

HIV counselling and testing services need to be made available to all women of childbearing age and their partners because PMTCT interventions depend on both partners knowing their HIV status. Counselling and testing services should be available throughout the healthcare system.

Provide suitable counselling for women who are HIV-negative

Counselling provides an opportunity for a woman who is HIV-negative to learn how to protect herself and her infant from HIV infection. It can also serve as powerful motivation to adopt safer sex practices, encourage partner testing and discuss family planning. More information about how to conduct a family planning session for HIV-negative women can be found in Appendix 2-A.

Prevent blood-to-blood transmission

Screen all blood and blood products for HIV according to national guidelines.

Follow Standard Precautions, which will be discussed in greater detail in *Module 8: Safe and Supportive Care in the Work Setting*. Standard Precautions include:

- Use of protective equipment
- Safe use and disposal of sharps
- Sterilization of equipment
- Safe disposal of contaminated waste products
- Avoiding the use of contaminated materials

Other practices that prevent transmission in the healthcare setting include using disposable (single-use) injections and ensuring that HCWs and home birth attendants receive training on measures to prevent blood-to-blood transmission. Specifically, HCWs should be educated about the importance of cleaning and sterilizing needles/syringes, scalpels and other sharp objects used to cut or pierce the skin or inject medication. This is important for equipment that is soiled with human blood whether it is within healthcare settings or other community settings.

Barrier methods

Both male and female condoms, used correctly and consistently, can provide protection against STIs, reduce the risk of HIV transmission and also prevent unintended pregnancies. Condoms are subject to breaking and can be affected by extreme heat and therefore must be properly stored and handled.

Clients should be informed that although condoms are very effective when used properly, they are not 100% effective.

Male condoms are familiar to many clients and readily available. Tips for correct use of male condoms include:

- Examine the condom package for tears or damage.
- Check the expiry date on the condom package before using.
- Open the package carefully so the condom does not tear.
- Do not leave condoms in wallets or hot places for long periods of time.
- Use a water-based lubricant only, not Vaseline which damages condoms.
- Put the condom on after erection and before any sexual touching.
- Squeeze the tip of the unrolled condom and leave an airless pocket to collect semen.
- After intercourse, withdraw the penis while still erect.
- When removing condom, hold the base of the condom while slipping it off.
- Never reuse a condom.

Female condoms, newer but gaining in popularity, have the following characteristics:

- Safe and pre-lubricated
- Made of strong, soft plastic (polyethylene)
- Reliable and provide sensitive sexual pleasure for the couple
- Have a flexible ring at each end to prevent shifting
- One size fits all: the inner ring is inserted in the vagina and the outer ring covers the outside of the genitalia.
- Can be inserted up to eight hours before sex or just before sex
- Intended for single use only.

Advantages of the female condom:

- Empower women to actively apply primary prevention strategies
- Act as an effective barrier against all STIs, including HIV and against unintended pregnancy

See Appendix 2-B, *Male and Female Condom Use* for additional information.

Exercise 2.2 Supporting condom use: Discussion and demonstration	
Purpose	<ul style="list-style-type: none"> ▪ To review the concept of condoms providing protection against HIV, STIs, and unintended pregnancies ▪ To examine strategies to promote the consistent and correct use of condoms.
Duration	60 minutes
Instructions	<ul style="list-style-type: none"> ▪ Refer to Appendix 2-B for instructions on male and female condom use. ▪ After a trainer-led discussion on access to condoms and a demonstration on the correct use of male condoms, the group will be divided into four groups. Two groups will be practicing with male condoms and two with female condoms (if a model is available). A trainer will be there to assist and answer questions. ▪ After 20 minutes, groups will be rotated so that each person will have the opportunity to practise with both male and female condoms. ▪ When finished, the large group will reassemble and participate in a discussion on condom use.

Exercise 2.3 The handshake game: Interactive game and discussion	
Purpose	To explore the concept of HIV and STI transmission—both with and without the use of protection—when individuals are sexually active with multiple partners.
Duration	30 minutes
Instructions	<ul style="list-style-type: none"> ▪ From the basket that the trainer will pass around, take a piece of paper and do not look at it. ▪ Approach three other people in the group and shake hands with them. It is important to remember with whom a handshake took place. ▪ After shaking hands with 3 people, participants will return to their seats and open the sheet of paper. ▪ The trainer will give specific directions about standing up or sitting down based on what is written on the piece of paper and the people with whom a handshake took place. ▪ This process may be repeated if requested by the facilitator. ▪ After the game, the trainer will lead a discussion on HIV and STI

Exercise 2.3 The handshake game: Interactive game and discussion
transmission and ways to prevent transmission.

Element 2: Prevention of unintended pregnancies among women who are HIV-infected

Family Planning (FP) is part of a comprehensive public health strategy to prevent MTCT. With appropriate support, women who know they are HIV-infected and who choose not to have more pregnancies can avoid unintended pregnancies and therefore reduce the number of infants at risk for MTCT.

Family planning services are especially important for HIV-infected mothers who have stopped exclusive breastfeeding early to prevent MTCT and those who chose replacement feeding. Family planning clinics can also be sites for couple counselling and testing for HIV infection.

The rapid spread of HIV has made access to effective contraception and family planning services even more important throughout the world. Most women are unaware of their HIV status. Access to family planning counselling and referral for women known or thought to be HIV-infected and their partners is critical for preventing unintended pregnancies. Such counselling also provides an opportunity to discuss related risks, both present and future, and is a vital component of reducing maternal and child morbidity and mortality.

- Effective family planning can help prevent unintended pregnancies and help women who are HIV-infected protect their own health while taking care of their families.
- Providing safe and effective contraception and high-quality reproductive health counselling contribute to informed decision-making about pregnancy choices.

A range of family planning services, when integrated into existing health services, can minimize the stigma associated with HIV/AIDS and provide:

- Individual and couple counselling
- Continued risk assessment
- Early diagnosis and treatment of STIs, including HIV/AIDS
- Information and skills needed to practise safer sex
- Access to contraceptives

FP methods should be discussed with women during pregnancy and soon after delivery. Women should be provided access to their chosen method of contraception after delivery to avoid unintended pregnancy and risk of new infection if already HIV-infected.

Common Contraceptive Options

Barrier Methods

- Male condoms (e.g., Salama, Dume)
- Female condoms (e.g., Care and Lady Pepeta)

Must be used consistently and correctly

Must be readily available

Oral Contraceptives

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

Injectable Contraceptives

- Depo Provera (administered once every three months)
- Contraceptive Implants** (subdermal, 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
 - Vasectomy – male

Each of the above contraceptive options should be explored within the context of an individual's health, other medications in use and ready access. For additional information on how to conduct a family planning counselling session and on the potential interactions between ARV treatment and contraceptives methods, see *Appendix 2-A*.

Barrier methods and “dual protection”

Either male or female condoms, used correctly and consistently, can provide protection against STIs, reduce the risk of HIV transmission and also prevent unintended pregnancies.

Dual protection is the use of one or more methods of contraception that prevent STIs, including HIV, and unintended pregnancy. Example: birth control pills would be a single method, the use of birth control pills AND barrier protection (condoms) would be dual protection.

The use of dual protection by HIV-infected couples can protect them from re-infection with different strains of HIV and effectively help to space their children, avoiding the physical, emotional and economic stress related to unintended pregnancies.

Element 3: Prevention of HIV transmission from women infected with HIV to their infants

Many HIV-infected women will be diagnosed for the first time during pregnancy. Although much of the focus of intervention in pregnancy will be to reduce mother-to-child transmission, ongoing care and support for the mother and child is very important, as is long-term HIV treatment for the mother.

PMTCT usually refers to specific programs to identify pregnant women infected with HIV and to provide them with effective interventions to reduce MTCT.

Specific interventions to reduce HIV transmission from an infected woman to her child include routine HIV testing, antiretroviral treatment and prophylaxis, safer delivery practices and safer infant-feeding practices. When an ARV medication is given to the mother and infant to prevent MTCT, it is referred to as *ARV prophylaxis*.

PMTCT core interventions and how these interventions work

- Routine HIV testing identifies women infected with HIV.
- Antiretroviral prophylaxis and treatment reduces maternal viral load and foetal exposure to the virus during pregnancy and delivery.
- Safer delivery practices, including caesarean section delivery, reduce infant exposure to the virus during labour and delivery.

- Safer infant-feeding practices reduce infant exposure to the virus through safer feeding options.

ARV prophylaxis for the mother

ARV prophylaxis given to a pregnant woman who is HIV-infected does not provide long-term benefits to the woman. Pregnant women with HIV/AIDS require combination ARV treatment to reduce the risk of HIV-related illness when eligible. As long-term ARV treatment becomes more available, there should be integration between HIV care and treatment and PMTCT programmes.

Global Trends in MTCT

In industrialized countries where women infected with HIV receive combination ARV treatment and do not breastfeed—and where elective caesarean sections are safe, feasible and commonly performed—the rate of MTCT has been reduced to below 2%. The reason women with HIV do not breastfeed in industrialized countries is because access to replacement feeding is affordable, safe and commonly used.

ARV prophylaxis can reduce MTCT by 40–70%. The impact is greatest (closer to 70%) when women do not breastfeed, because avoiding breastfeeding eliminates risk of HIV transmission through breast milk. Current ARV prophylaxis regimens only prevent HIV transmission during the early breastfeeding period. Studies are ongoing to determine whether ARV prophylaxis for mother or child during breastfeeding can help reduce the risk of HIV transmission during that period.

Partner involvement in PMTCT

PMTCT efforts should be as comprehensive as possible and acknowledge that both mothers and fathers have an impact on transmission of HIV to the infant:

- Both partners need to be aware of the importance of safer sex throughout pregnancy and breastfeeding.
- Both partners should be tested and counselled for HIV.
- Both partners should be made aware of and provided with PMTCT interventions.
- Both partners should be aware of the availability of ARVs for prophylaxis and treatment.

Element 4: Provision of treatment, care and support to women and their families

Programmes for the prevention of HIV in infants and young children will identify large numbers of women infected with HIV who will need special attention. Medical care and social support are important for women living with HIV/AIDS to address concerns about both their own health and the health and the future of their children and families.

If a woman is assured that she will receive adequate treatment and care for herself and her family, she may be more likely to accept HIV counselling and testing and, if HIV-infected, accept interventions to reduce MTCT.

It is important to develop and reinforce referrals to programmes for treatment, care and support services that promote long-term care of women who are HIV-infected and their families. Collectively these programmes are sometimes called “PMTCT-Plus.”

PMTCT-Plus services include:

- HIV counselling and testing for the mother, partner and children
- ARV treatment for the mother and infant
- Treatment, care and support services for other infected family members
- Diagnosis of HIV infection in infants and children

Treatment, care and support services for women

Comprehensive services for HIV-infected women include the following:

- Infant-feeding support
- Reproductive healthcare, including family planning and counselling
- Nutritional counselling, care and support
- Psychosocial and community support
- Prevention and treatment of opportunistic infections
- ARV treatment at care and treatment clinics (CTCs)
- Symptom management
- Palliative care

Care and support of the infant and child who are HIV-exposed

Children whose mothers are infected with HIV are at higher risk than other children for illness and malnutrition:

- They may be infected with HIV and become sick even when adequate healthcare and nutrition are provided.
- Infants who are not breastfed in order to prevent MTCT lack the protection against gastroenteritis, respiratory infections and other infections that breastfeeding confers.
- If mothers are sick, they may have difficulty caring for their children.
- Families may be economically vulnerable due to HIV-related illnesses and deaths among adult relatives.

Nutritional support for the infant or child who is HIV-exposed

- Support the mother's infant-feeding choice.
- Provide education on hydration and early reporting of diarrhoea.
- Monitor for growth and development.
- Monitor for signs of infection that can alter feeding patterns.

Infants and children who are HIV-exposed require regular follow-up care—especially during the first 2 years of life—including immunizations, HIV testing and ongoing monitoring of feeding, growth and development. (See *Module 7: Comprehensive Care and Support for Mothers and Families with HIV Infection*.)

UNIT 3 Role of Reproductive and Child Health (RCH) Services in the Prevention of HIV Infection in Infants and Young Children

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Describe the role of reproductive and child health (RCH) services in the prevention of HIV infection in infants and young children and treatment of HIV/AIDS in mothers and families.

RCH services

HIV infection is one of the most important health problems for pregnant mothers and infants in many developing countries, including Tanzania. PMTCT programmes need to be integrated as an essential part of RCH and antenatal care in order to work. PMTCT programmes also need to complement national RCH initiatives.

RCH care encompasses a broad range of educational and clinical services that help mothers, their children and their families lead healthy lives. *Although all four elements of a comprehensive PMTCT programme are important, antenatal care is the most common entry point for women into those national programmes.*

RCH programmes facilitate PMTCT by providing:

- Essential ANC
- Family planning services
- ARV treatment and prophylaxis
- Safer delivery practices
- Counselling and support for the woman's infant-feeding choice
- Follow-up care and support during postpartum visits and child clinic visits

All mothers and infants benefit as PMTCT programmes are integrated into existing RCH services. HIV-infected women who are pregnant receive a package of RCH services and are referred to the CTC for HIV-related care.

Tanzania's national plan for integrating RCH, PMTCT and HIV care and treatment services is as follows. Pregnant women will receive routine HIV counselling and testing in RCH clinics at their first ANC visit. If found HIV-positive in the same visit, blood specimens for specific HIV investigations—including CD4 cell counts, full blood picture, and renal and liver function tests—will be taken. Test results should be available at the next visit. Results and women who are eligible for ARV treatment will be referred to a CTC.

Women who receive ARV treatment for their own health will be seen at both ANC and CTC facilities until delivery and referred for continued care and support at CTC after the postpartum period. Those who do not meet the eligibility criteria for ARV treatment will be seen at ANC until delivery and puerperium and referred to CTC for continued care and support.

Linkages between CTC and RCH will have to be developed and reinforced because some women will be visiting back and forth between CTC and ANC clinics as a result of repeated pregnancies and deliveries.

HIV-exposed infants will be seen at the RCH clinics for follow-up, growth and nutritional monitoring, immunisations, HIV testing and cotrimoxazole prophylaxis. Those who meet the eligibility criteria for ARV treatment will be referred to a CTC. HIV testing will be done when the child is 18 months old.

Many elements of PMTCT programmes parallel and complement initiatives that are in development or are already offered by providers of high-quality antenatal care, for example, the Safe Motherhood Initiative. Other common global initiatives are Baby Friendly Hospitals, Baby Feeding and Saving Newborn Lives.

Comprehensive RCH services:

- Recognize that the best approach to preventing HIV infection in infants and children begins with the prevention of primary infection in parents-to-be.
- Provide information to prevent unintended pregnancies in women who are HIV-infected.
- Provide education about early recognition and treatment of STIs.
- Provide education about reducing the risk of MTCT.
- Provide growth monitoring for infants and children.
- Link and refer patients to healthcare and community services/NGOs and faith-based organizations (FBOs) that include the following:
 - HIV counselling and testing for partners
 - ARV treatment at CTCs
 - Treatment of symptoms
 - Palliative care
 - Nutritional care
 - Psychosocial and/or spiritual support (such as free support groups for women with HIV)
 - Income-generating projects
- Educate patients about how to recognize symptoms of opportunistic infections and measures they can take to prevent such infections.
- Educate patients about how to recognize early signs and symptoms of HIV infection in the infant or child.

All HIV-infected women after the puerperal period should be referred to CTC at 42 days after delivery.

Integration of PMTCT into postpartum RCH services

Effective integration of PMTCT into postpartum RCH services is likely to strengthen maternal care, infant care and family care. RCH postpartum care services:

- Help protect the mother's health by providing medical and psychosocial supportive care.
- Offer assessment of infant growth and development, nutritional support, immunizations and early HIV testing. If the infant is HIV-infected, additional support services may include ARV treatment.
- Provide social support, HIV testing and counselling for family members, referrals to community-based support programmes and assistance with contending with stigma.

Module 2: Key Points

- Overall, the rate of MTCT of HIV is approximately 20-45% without intervention.
- Risk of transmission to the infant is highest when the mother's viral load is high. Two of the main reasons that a mother may have a high viral load are recent HIV infection and advanced AIDS.
- Effective PMTCT programmes provide access to combinations of interventions that can significantly reduce the rate of MTCT.
- A comprehensive approach is needed to prevent HIV infection in infants and young children.
- The four elements of a comprehensive approach to PMTCT programmes effectively reduce MTCT of HIV; these are:
 - Prevention of primary HIV infection, including the ABC approach
 - Prevention of unintended pregnancies in women infected with HIV
 - Prevention of HIV transmission from women infected with HIV to their infants
 - Provision of treatment, care and support to women infected with HIV, their infants and their families
- Primary prevention is the most effective way to control the spread of HIV.
- Preventing unwanted pregnancies through family planning counselling and providing access to contraception also reduces the number of infants exposed to HIV.
- The contraceptive method an HIV-infected woman chooses (including male and female condoms) will depend on her unique circumstances.
- Because ARV prophylaxis alone does not manage the mother's infection, ongoing ARV treatment and ongoing care and support are needed.
- RCH services, especially ANC, are an entry point to the range of services that provide treatment, care and support to HIV-infected women and their families at CTCs and in the community.

APPENDIX 2-A Family Planning in the Context of HIV Infection

Guidance on the Family Planning Counselling Session

HCWs counselling about family planning should:

- Respect all patients' rights to privacy and confidentiality.
- Provide unbiased correct information.
- Ensure that all women, regardless of HIV status, are knowledgeable about and free to make informed choices about pregnancy and contraception.
- Be sensitive to a couple's unique family planning needs and circumstances and tailor their counselling accordingly.
- Support patients' family planning decisions, even if they do not agree.
- Seek additional sources for training and information about family planning.

Undertake initial assessment (all women)²

- Are you pregnant? Do you want to be pregnant?
- What family planning method are you using?
- Are you happy with this method?
- What, if any problems have you experienced?

How is your general health? What problems are you experiencing? (Specifically ask about history of and assess for deep vein thrombosis and any other medical condition that could affect the choice of contraceptive method.)

- Are you familiar with condoms? What access do you have to condoms?
- What questions do you have about family planning?

Note to HCW: Review advantages and disadvantages of the available contraceptive choices. Take time to note which methods protect against STIs and HIV and which do not.

Assess risk (women who are HIV-negative or whose HIV status is unknown)

- How many partners have you had in the last 12 months?
- How many other partners does your partner have?
- How often do you use condoms with your partner(s)?
- What form of birth control did you use the last time you had sex? How about the time before that?
- Have you ever been diagnosed with a sexually transmitted infection (STI)?
- Have you or your partner(s) ever been tested for HIV?

Discuss risk reduction (all women)

- A person with HIV can look and feel completely healthy. The only way to know if you are infected with HIV is to have an HIV test.
- Unless your partner has been tested, you will not know if your partner has an STI or HIV.
- Condoms are important as dual protection—to prevent pregnancy and reduce the risk of acquiring an STI or HIV.

Note to HCW: Discuss risk assessment to identify how clients can reduce risk.

Support the client to select a contraceptive method (all women)

- What suits you best for both family planning and STI/HIV protection?
- Will your sex partners agree to use this method?
- What if you can't stick to your first choice?
- What will you say to your partner(s) if they refuse?

² Although the assumption is that the client is female, this guidance can be adapted for use with male clients. Ideally all clients are accompanied by their partner.

APPENDIX 2-A Family Planning in the Context of HIV Infection

(continued)

Family Planning Counselling for HIV-infected Women and Families

Discuss HIV and pregnancy

- Pregnancy does not accelerate HIV progression but, overall, HIV-infected pregnant women have poorer outcomes than uninfected women.
- A mother with HIV can pass the virus to her baby during pregnancy, labour and delivery and breastfeeding. If you are pregnant or become pregnant, it is important that you attend antenatal care, take advantage of available PMTCT interventions and get care and treatment for your HIV infection. (Note to HCW: Ensure that client has been given referrals for HIV treatment, care and support services and—if she is pregnant—PMTCT services.)
- Before deciding to have a (another) baby you may want to consider the realities of caring for and raising a child with HIV.

Support the client to select a contraceptive method

- Nearly **ALL** methods of contraception are safe for use by women with HIV.
- **Condoms** are important as dual protection—to prevent pregnancy, most STIs and further transmission of HIV. HIV infected women need continuing protection against STIs.
- **Hormonal contraceptives**, including combined oral contraceptive pills and injectable methods (such as Depo-Provera/DMPA), are highly effective birth control methods, but:
 - HCWs prescribing a hormonal contraceptive for their HIV-infected patients on ARV therapy should counsel women about possible interactions between hormonal contraceptives and certain ARV medications. Clients should understand that the clinical significance of these interactions is unclear but that using a back-up method like a condom is recommended to avoid unintended pregnancy.
 - Women taking rifampicin for tuberculosis usually need to use a back-up method of contraception like condoms while taking rifampicin, as rifampicin can lower the efficacy of some hormonal contraceptives (pills, monthly injectables or implants).
- **IUDs** can be used successfully in HIV-infected women on ARV therapy and in asymptomatic or mildly symptomatic women. IUDs are not usually recommended for women with advanced HIV who are not on ARV therapy.
- **Spermicides, or diaphragm with spermicides** should not be used by HIV-infected women due to enhanced risk of HIV transmission.
- **Fertility awareness-based methods** are difficult and unreliable in women with AIDS or on ARV therapy—due to changes in menstrual cycle and higher body temperatures.
- **Lactation amenorrhea method (LAM)** is a temporary contraceptive method that should only be used by women who (i) are less than 6 months postpartum, (ii) are exclusively breastfeeding, and (iii) have not resumed menstruating. Women who meet all three of these criteria have only a 1% to 2% chance of getting pregnant. As this method is temporary, every effort should be made to get women who desire family planning, on another method as soon as possible.
- **Sterilization** is a permanent method of birth control and an excellent method for women who do not desire any more children. There is no medical reason to deny sterilization to women with HIV infection.

Discuss HIV and Fertility

- HIV may reduce fertility by as much as 40% but ARV therapy increases fertility. Women on ARV therapy should be made aware of the possibility of their fertility returning. Emphasize that family planning can reduce unintended pregnancy.

APPENDIX 2-A Family Planning in the Context of HIV Infection *(continued)*

- HIV-infected men are more likely to have low sperm count and low sperm quality than HIV-negative men.
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Adapted from:

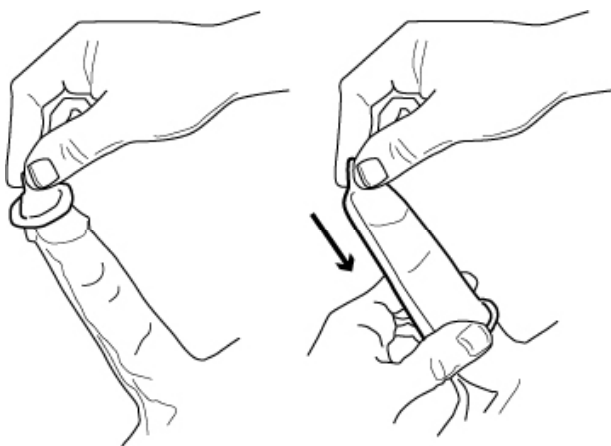
- WHO 2006. *Decision-Making Tool for Family Planning Patients and Providers*. Available at http://www.who.int/reproductive-health/family_planning/counselling.html
- Family Health International 2006. *Contraception for Women and Couples with HIV*. Available at <http://www.fhi.org/en/RH/Training/trainmat/ARVmodule.htm>

APPENDIX 2-B Male and Female Condom Use

Correct and consistent condom use prevents transmission of STIs, including HIV, and prevents unintended pregnancies.

Instructions for use: Male condoms

1. Examine the condom package for tears or damage.
2. Check the expiry date on the package.
3. **Carefully** open the package so that the condom inside is not mistakenly torn.
4. Remove the condom and squeeze the tip of the unrolled condom (about ½ inch) in order to leave an airless pocket to collect semen.
5. After erection and before any sexual contact, place the condom on the tip of the penis.
6. To avoid breakage, ensure that there is no air in the tip of the condom by squeezing the tip while putting it on.
7. Roll the condom down the shaft of the penis while squeezing the tip of the condom.
8. After intercourse, while the penis is still erect, grip the rim of the condom and carefully withdraw.
9. Hold the condom in place at the base of the penis to avoid it slipping off.
10. Do not flush male condoms in the toilet – knot the condom, wrap in paper or tissue and safely discard in a pit latrine, bin, or burn it.



Other tips:

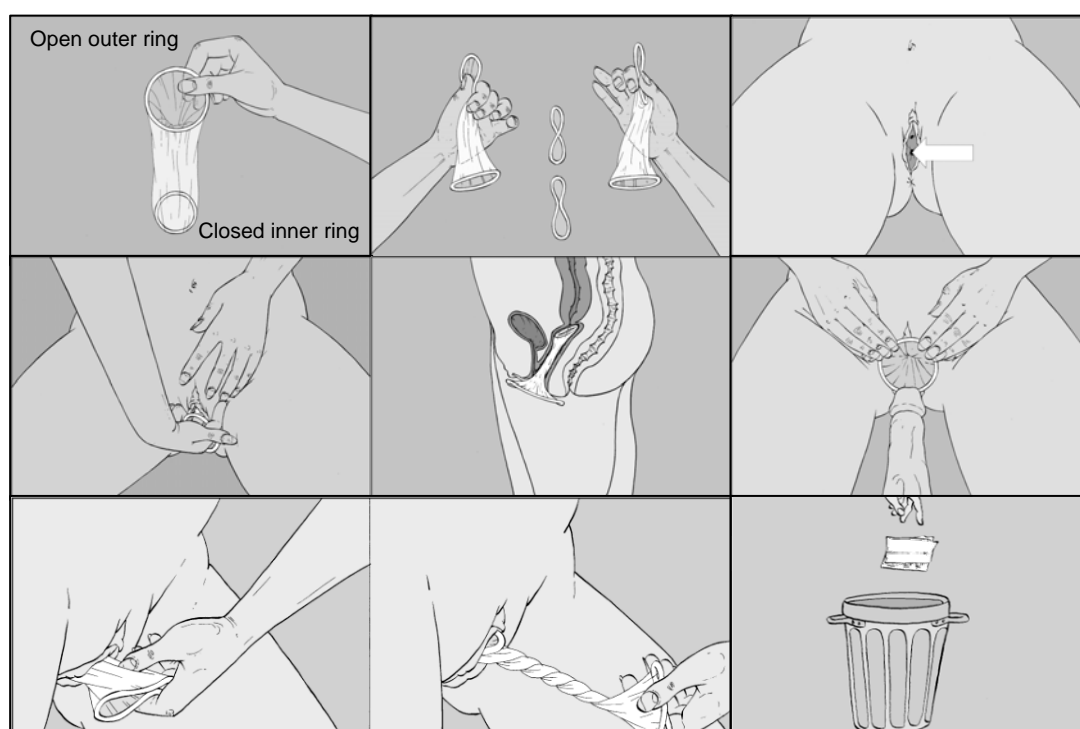
- If you feel the condom break during intercourse, stop immediately, withdraw, wash the genitalia immediately and put on a new condom.
- Avoid long-term storage of condom in wallet or in hot/sunny places.
- Do not use two condoms at the same time.
- Never reuse a condom.

APPENDIX 2-B Male and Female Condom Use *(continued)*

Correct and consistent condom use prevents transmission of STIs, including HIV, and prevents unintended pregnancies.

Instructions for use: Female condoms

1. Examine the condom package for tears or damage.
2. Check the expiry date on the package.
3. Examine the condom: Most models have an inner ring and an outer ring. The inner ring is closed and used for insertion. The open end covers the outer area of the vagina.
4. Choose a position that is comfortable for insertion - squat, raise one leg, sit or lie down.
5. Squeeze the inner ring with thumb and middle finger (so it becomes long and narrow), and then insert the inner ring and sheath into the vaginal opening. Then put your index finger inside the condom and push the ring up as far as it will go past the pubic bone. When in place, it should not be uncomfortable – you should not even feel it. Avoid, as much as possible, having any fingers with vaginal secretions from coming in contact with the inner lining of the condom.
6. The outer ring should be outside the vagina and the inside sheath should not be twisted.
7. Ensure that your partner's penis goes into the condom's opening and not beside it, by holding the outer ring of the condom against your vulva and guiding his penis through the opening.
8. A few drops of water-based lubricant can be used inside the sheath or applied to the penis.
9. Remove the condom before standing up by squeezing and twisting the outer ring and gently pulling it out.
10. Do not flush female condoms in the toilet – knot the condom, wrap in tissue or paper and either burn it or safely discard in a bin or pit latrine.



APPENDIX 2-B Male and Female Condom Use *(continued)*

Other tips:

- Always remove and use a new condom if the condom tears or the outer ring is pushed inside.
- It is always better to use a new condom each time you have sex.
- Do not use both male and female condoms at the same time.

Note: Female condoms are more costly than male condoms.

Adapted from: The Female Health Company. *Picture Book for FC Condom Demonstration—Flipchart*, n.d. Available at: http://www.femalehealth.com/resources_PPs/Tool%20How%20to%20insert%20FC_wht.ppt

Module 3 Stigma and Discrimination Associated with HIV/AIDS and MTCT



Total Module Time: 210 minutes (3 hours, 30 minutes)

Exercise 3.1 Exploring stereotypes: Labels interactive game	
Purpose	To help participants recognise the role of stereotypes in stigma.
Duration	30 minutes
Instructions	<ul style="list-style-type: none"> ▪ A “label” will be attached to each participant’s back using tape as they enter the room. Participants should not look at the labels attached to their backs. ▪ Move around the room and engage in conversation with other participants. With each participant, react as a member of society might react to a person with the label the other participant is wearing. The interactions should clearly convey societal attitudes toward the labels that participants are wearing without telling them what their labels are. ▪ After 5–7 minutes, participants return to their seats and comment on their feelings as they circulated in the room talking to each other. ▪ Each participant tries to guess the label they were wearing based on the reactions of the other participants to them. ▪ Participants take the label off their back and look at it. ▪ In the large group discussion, participants share their thoughts about the following questions: <ol style="list-style-type: none"> 1. Did you guess what your label was? 2. How did it feel to be treated in a stereotyped way? 3. What was the experience like for you? 4. Were you puzzled or surprised by how you were treated? ▪ In the discussion, also identify some specific ways to combat stereotypes and help decrease stigma in your clinical setting.

Module Objectives

After completing the module, the participant will be able to:

- Define stigma, discrimination and denial.
- Identify HIV/AIDS-related stigma and discrimination.
- Describe human rights issues related to HIV/AIDS stigma and discrimination.
- Provide examples of how stigma and discrimination affect the community.
- Identify ways to reduce stigma and discrimination in PMTCT programmes.

UNIT 1 Introduction to Stigma and Discrimination and International Human Rights

Unit Objectives

After completing the unit, the participant will be able to:

- Define stigma, discrimination and denial.
- Identify HIV/AIDS-related stigma and discrimination.
- Describe human rights issues related to HIV/AIDS stigma and discrimination.

Stigma, Discrimination and Denial

Introduction to stigma, discrimination and denial

HIV is not only the greatest public health challenge of our time, but is also one of our greatest human rights challenges. People living with HIV/AIDS (PLWHA) have not been treated fairly by their communities and are burdened not only with the disease but also with stigma and discrimination. Stigma and discrimination remain major barriers to preventing HIV transmission and providing treatment, care and support to people who are HIV-infected and their families.

The stigma of HIV infection can discourage people from getting tested for HIV, disclosing test results, taking antiretroviral treatment or prophylaxis or accepting safer infant-feeding practices. Women often feel that they need to keep their HIV status secret because they fear being stigmatised and discriminated against by their family, friends and community members.

HIV/AIDS-related stigma is increasingly recognised as the greatest challenge to reducing the spread of HIV at the global, national and community level.

The most effective responses to the HIV epidemic are those that prevent the stigma and discrimination associated with HIV and protect the human rights of people living with HIV and those at risk of infection.

HIV-related Stigma

What is stigma?

Stigma is a mark of shame or disgrace. Stigmatisation is the act of attributing undesirable qualities to someone who is perceived as being shamefully different from the social ideal or norm. Stigmatising someone brands him or her as disgraceful or deviant.

HIV-related stigma refers to unfavourable attitudes and beliefs about PLWHA their families, friends and communities. Stigmatising attitudes are often directed toward the person with HIV **and** toward behaviours believed to have caused the infection. Stigma is particularly pronounced when the behaviour linked to the origin of a particular disease is perceived to be under the individual's control, such as sex work or injection drug use. In these cases, the sick person is often blamed for his or her illness and said to "deserve it".

People who are often already socially outcast—men who have sex with men, sex workers and injection drug users—frequently bear the heaviest burden of HIV-related stigmatisation.

People who are HIV-infected are often assumed to be members of these groups, whether they are or not.

What is Discrimination?

Discrimination is any distinction, exclusion, restriction or preference which is based on exclusionary perceptions or structures and which has the purpose or effect of nullifying or impairing recognition, enjoyment or exercise by all persons on an equal footing of all rights and freedoms.

Discrimination includes the denial of basic rights and services such as health care, employment, legal services and social welfare.

Examples of discrimination

- A HCW refuses to examine a person with HIV.
- The wife and children of an HIV-infected man are asked to leave his village after his death.
- An individual loses his job because it becomes known that he or she is HIV infected.
- A person finds it difficult to get a job once it is revealed that he or she is HIV-infected.
- A woman who decides not to breastfeed is assumed to be HIV infected. Community members reject her.

Stigma reflects an attitude. **Discrimination** is an act or behaviour.

What is Denial?

The term “**denial**” is commonly used to describe the refusal of individuals (and communities) to acknowledge that they may be at risk for HIV infection or may already be infected or affected. This disownment of responsibility and disassociation from the truth often stems from an unwillingness to face the stigma that HIV infection brings.

Denial is usually the result of stigma and fear. In the HIV epidemic, the perceived association between HIV infection and undesirable behaviour or immorality causes individuals to disown the disease or disassociate themselves from it even when they may be affected. Instead, they look for alternative, usually more favourable, labels for themselves and continue to believe that only certain marginalized groups are at risk of infection. For example, a community leader may deny that HIV exists in his community because his community is god-fearing and “HIV is a punishment for sinful people”; a woman may deny that she is at risk of infection because she is married and “only sex workers get HIV”.

Denying HIV slows the response to the epidemic because it prevents people from taking actions that would treat their infection or lower their risk of becoming infected. On a community level, denial causes people to fail to take the action that is needed to respond to the epidemic and meet the needs of those living with HIV infection. Denial also fuels stigma by making those who are infected appear to be abnormal and exceptional.

Stigma, HIV/AIDS and Women

Compared to the incidence of HIV among men, the number of infected women worldwide is growing more rapidly. Economic and social inequalities between men and women make it difficult for women to access effective prevention, health care and support. Fear of violence and abandonment also makes it difficult for women to negotiate safer sex with their partners.

- In one worldwide population study, 10% to more than 50% of women reported physical assault by an intimate partner in their lifetime.
- Sexual abuse and harassment occur, but it is often not reported because women:
 - feel shame and guilt for what has happened.
 - think that their statements will be denied or ignored.
 - do not know where they can report abuse.
 - fear that they will be further victimised if they report the incident.

The woman is often the first person in a couple to be tested for HIV. If found to be HIV-infected, she may be blamed by her partner for introducing HIV into the family. *Women may also be blamed for mother-to-child transmission of HIV.*

UNAIDS-sponsored research in India and Uganda showed that women with HIV/AIDS may be doubly or triply stigmatised—as women, as PLWHA, as the spouse of person who is HIV-infected, or as the widow of a person who died of AIDS. Pregnant, HIV-infected women may also face negative reactions from the community and healthcare workers because they are pregnant or because they have children.

As a consequence of HIV-related stigma, a woman may experience abandonment, loneliness and discrimination. This may include violence, loss of shelter, economic, family and community support. All of these reasons may compel a woman to keep her HIV-status secret.

Efforts to reduce HIV-related stigma should recognise the burden felt by HIV-infected women. Community outreach can help decrease stigma, promote open discussion about HIV, support partner testing and encourage safer sexual practices and behaviours.

Relationship between stigma, discrimination, and denial

Stigma, discrimination and denial are linked. Stigmatising thoughts and denial can lead a person to act or behave in a way that discriminates against PLWHA or those thought to be HIV infected. Stigmatised individuals may suffer discrimination and human rights violations.

Stigma, discrimination and denial have been directed towards people with other contagious or disfiguring diseases, such as tuberculosis, syphilis and leprosy. However, the stigma associated with HIV appears to be more severe than stigma associated with other diseases.

Over time, the dynamics of stigma can change. Stigma is a socially controlled phenomenon and reflects societal views that are constantly adapting based on changes in society or advances in technology and medical care. History provides evidence of the pioneering work of many prominent individuals that have moderated or favourably changed the views of once-stigmatised groups such as people with tuberculosis or cancer.

For HIV, disclosure by prominent individuals with HIV, the availability of better medicine and the resulting improvement in quality of life of PLWHA are changing perceptions of PLWHA. There is broader recognition and acknowledgement of their potential to continue to be productive contributors to the community.

International Human Rights and HIV/AIDS-related Stigma and Discrimination

Freedom from discrimination is a fundamental human right. Principles of justice should be universally applied to people everywhere. According to recent United Nations Commission on Human Rights resolutions, "discrimination on the basis of HIV/AIDS status, actual or presumed, is prohibited by existing human rights standards." In other words, discrimination against PLWHA or people thought to be infected is a clear violation of human rights.

There is worldwide concern at the slow improvement in the protection of human rights and stigma and discrimination related to HIV/AIDS. At the 2006 International AIDS Conference in Toronto, Dr. Peter Piot of UNAIDS said that there are now increased efforts to overcome denial of stigma and discrimination and more is being done to protect the rights of people living with HIV, women, poor people, men having sex with men, drug users, migrants and refugees. In the Political Declaration on HIV/AIDS 2006, governments across the world renewed their commitment to fight stigma and discrimination. This stronger commitment to protecting human rights includes clear priorities tied to stigma and discrimination. A summary of the *International Guidelines on HIV/AIDS and Human Rights*, as agreed by the Second International Consultation (July 2002), can be found in Appendix 3-A. These guidelines urge governments to review laws, policies, systems and practices to ensure protection of the human rights of people at-risk of, or infected with, HIV.

Protect, respect and fulfil human rights in relation to HIV

- All women and men, irrespective of their HIV status, have a right to determine the course of their sexual and reproductive lives and to have access to information and services that allow them to protect their own and their family's health.
- Children have a right to survival, development and health.
- Women and girls have a right to information about HIV/AIDS and access to the means of protecting themselves against HIV infection.
- Women have the right to access HIV counselling and testing and to know their HIV status.
- Women have a right to choose not to be tested or to choose not to be told the result of an HIV test.
- Women have a right to make decisions about infant feeding on the basis of full information and to receive support for the course of action they choose.

UNIT 2 Effects of HIV/AIDS-related Stigma and Discrimination

Unit Objective

After completing the unit, the participant will be able to:

- Provide examples of how stigma and discrimination affect the community.

Features of stigma

Introduction

HIV-related stigma is complex, changing and deeply ingrained. It exists in many countries and in many ways. The points below provide PMTCT programmes with some ideas for how to reduce HIV-related stigma and discrimination.

Attitudes and actions are stigmatising

A word, action or belief may be unintentionally stigmatising or discriminatory toward an individual who is HIV-infected. People are often unaware that their attitudes and actions are stigmatising.

A person may have behaviours that conflict with their beliefs. For example:

For example:

- A person who says s/he is opposed to stigmatisation may believe that PLWHA indulge in immoral behaviours, deserve what they get, or are being punished by God for their sins.
- A person who knows that HIV cannot be transmitted through casual contact may still refuse to buy food from a vendor who is infected with HIV.

Choice of language may express stigma

Language is central to how stigma is expressed. One way that language can be stigmatising is in the choice of words when referring to HIV disease or PLWHA. In some countries people refer to HIV indirectly, for example, "that disease we learned about" or refer to PLWHA as a "walking corpse" and "expected to die".

Lack of knowledge and fear foster stigma

Lack of knowledge may cause people to be frightened of HIV. Most people have some understanding of HIV transmission, but many lack in-depth or accurate knowledge about HIV. For example, many do not understand the difference between HIV and AIDS or how the disease progresses. The fear of death can be very powerful. HIV-related stigma may be caused by fear of infection, which, for many people, is associated with death.

Shame and blame are associated with HIV/AIDS

Stigmatisation often centres on the sexual transmission of HIV. Many people assume that individuals who are HIV-infected must have been infected through sexual activities deemed socially or religiously unacceptable. People who are HIV-infected are often thought to be careless or unable to control themselves, and therefore responsible for their infection. Sexuality, morality, shame and blame are all associated with HIV/AIDS stigma.

Stigma makes disclosure more difficult

Disclosure is revealing one's HIV status.

Many people infected with HIV find it difficult to share their HIV status with others. They fear that their HIV status will subject them to unfair treatment and stigma. Disclosure is encouraged because:

- Disclosure can encourage partners to be tested for HIV.
- Disclosure can help prevent the spread of HIV to partners.
- Disclosure allows individuals to receive support from partners, family and friends.

Stigma can exist even in caring environments

Caregivers who offer love and support to family members living with HIV/AIDS may also exhibit stigmatising and discriminatory behaviour; for example, they may place blame and scold. In many cases, the caregivers do not recognise their behaviour as stigmatising.

- Stigmatising attitudes can exist among individuals, communities and HCWs who are opposed to HIV-related stigma.
- HCWs, family and community members may express both sympathetic and stigmatising attitudes toward PLWHA; for example, a nurse may give good care to an HIV-infected mother but later mention to a friend that the mother is to blame for her HIV-infected infant.
- Families that provide genuine and compassionate care may sometimes stigmatise and discriminate against a family member with HIV/AIDS.

Stigma and discrimination in the health sector

Some aspects of stigma and discrimination are difficult to abolish in the health sector as long as they exist in other settings such as the media, the workplace, family, religious settings and other social spaces. Several factors are vital in ensuring a reduction in healthcare workers discriminatory attitudes:

- Accurate knowledge of the means of transmission and non-transmission of HIV
- Skills in interacting appropriately with patients with HIV/AIDS
- Regular contact with PLWHA
- Techniques to avoid burnout
- Awareness of human rights norms that protect patients with HIV/AIDS

Exercise 3.2 Examples of stigma and discrimination: Large group discussion	
Purpose	To encourage participants to consider examples of stigma and discrimination in their own settings.
Duration	15 minutes
Instructions	<ul style="list-style-type: none"> ▪ Share examples of stigmatising and discriminatory messages or attitudes that participants have seen in each of the following places: <ul style="list-style-type: none"> ▪ Media (newspapers, television, or radio programmes) ▪ Health services ▪ Workplace ▪ Religion ▪ Family ▪ Community

Examples of stigma and discrimination

In the media

- Suggesting that there are specific groups of people with HIV who are guilty (such as commercial sex workers or injection drug users) while others (such as infants) are innocent.
- Portraying HIV as a death sentence, which leads to fear and anxiety, and to the belief that HIV is a disease that cannot be managed like other chronic diseases.
- Showing stereotypical gender roles, which may keep women feeling powerless to influence sexual decisions and therefore increase their risk of getting HIV.

In health services

- Refusing to provide care, treatment and support to PLWHA.
- Providing poor quality care for PLWHA.
- Violating patient confidentiality.
- Refusing to mention HIV or even talk about it with clients.
- Using infection-control procedures (such as gloves) only with patients thought to be HIV-infected, rather than with all patients.
- Providing care in specialized settings (such as clinics for people with sexually transmitted infections), which further stigmatizes and segregates PLWHA.
- Advising or insisting that PLWHA undergo procedures, such as abortion or sterilisation, which would not be routinely suggested for others who are not HIV-infected.

In the workplace

- Requiring testing before employment.
- Refusing to hire people who are HIV-infected or their family members.
- Dismissing employees because of HIV status.
- Refusing to work with colleagues who are HIV-infected because of fear of infection.

In the context of religion

- Denying PLWHA participation in religious/spiritual traditions and rituals (such as funerals).
- References to HIV as a punishment or test.

In the family and local community

- Isolating people who are HIV infected.
- Restricting participation of PLWHA in local events.
- Refusing to allow children who are HIV-infected or exposed into local schools.
- Talking negatively about partners and children of PLWHA.
- Using violence against a spouse or partner who has tested HIV-positive.
- Denying support for the family members and orphans of PLWHA that have died.

Effects of Stigma

Stigma is disruptive and harmful at every stage of HIV/AIDS, from prevention and testing to treatment and support. For example, people who fear discrimination and stigmatisation are less likely to seek HIV testing while persons who have been diagnosed may be afraid to seek necessary care. PLWHA also may receive suboptimal care from workers who stigmatise them.

- Stigma may reduce an individual's choices in health care and family or social life.
- Stigma may limit access to measures that can be taken to maintain health and quality of life.

HIV-related stigma leads to new HIV infections

- Stigma may deter people from getting tested for HIV.
- Stigma may make people less likely to acknowledge their risk of infection.
- Stigma may discourage those who are HIV-infected from discussing their HIV status with their sex partners or those with whom they share needles.
- Stigma may deter PLWHA from adopting harm-reduction practices that may label them as HIV-infected, like using condoms.

Stigma and discrimination can lead to social isolation

A study in South Africa found that both men and women who are HIV-infected face social isolation, rumours and gossip, removal from the home, rejection by the community and verbal abuse. One person in the study stated, "There are those who will tell you face-to-face that you are no longer needed in their friendship; those who will just isolate you." Another said, "People make jokes about HIV-infected people and point fingers at them."

Stigma and discrimination can limit access to services

HIV-related stigma and discrimination may discourage individuals from contacting health and social services, thereby increasing the risk of transmission to partners or children. In many cases, those people most in need of information, education and counselling will not benefit from these services—even when they are available.

Secondary stigma (stigma by association)

The effects of stigma often extend beyond the infected individual to stigma by association, also known as secondary stigma. Examples of **secondary stigma** are demonstrated by statements like, "If I sit near someone with AIDS, others will think that I have AIDS." Another example of secondary stigma was in South Africa where HIV/AIDS social workers reported that they were stigmatised because of their work with PLWHA.

Stigma and PMTCT Services

Stigma and discrimination pose distinct challenges to the delivery of PMTCT services. Notably, in many areas women may avoid replacement feeding because they know that they will be labelled as HIV-infected if they are not breastfeeding. The children of mothers who participate in PMTCT programmes may experience secondary stigmatisation because people assume that they are HIV-infected.

Consequences of stigma in PMTCT programmes

- Discourages women from accessing antenatal care services
- Prevents people from receiving HIV testing and, as a result, PMTCT services
- Discourages women from discussing their HIV tests and disclosing results to their partners
- Discourages women from accepting PMTCT interventions, e.g., ARV prophylaxis
- Discourages the use of recommended PMTCT safer infant-feeding practices

Unit 3 Reducing HIV/AIDS-related Stigma and Discrimination in PMTCT Programmes

Unit Objective

After completing the unit, the participant will be able to:

- Identify ways to reduce stigma and discrimination in PMTCT programmes.

Addressing Stigma in PMTCT Programmes

Introduction

Stigmatisation is a social process that must be addressed at the community level. Both PMTCT HCWs and patients are influenced by the community and culture in which they live. Therefore it is essential that PMTCT programmes collaborate with the community to address HIV-related stigma and discrimination. This unit presents interventions that can be implemented by PMTCT programmes and the communities they serve. These interventions cover a wide range of activities; each facility should set its own priorities.

To increase participation in PMTCT services, programmes should implement interventions that address HIV-related stigma. These efforts should occur at all levels:

- National
- Community
- PMTCT programme

National Level

High-level political support for national HIV/AIDS initiatives and policies that address the human rights of PLWHA are important. High-ranking politicians and other high-profile individuals, such as television stars and musicians, may serve as leaders and role models in these efforts. It is important to have programmes include formal and informal support at the national level, without which local initiatives will struggle.

Examples of national initiatives and policies that HCWs can support and advocate for:

- Legislation that protects the rights of PLWHA as human beings and patients
- Legislation that protects the legal rights of women in health care, education and employment
- Laws supporting anti-discrimination policies—at the administrative, budgetary and judicial levels
- National efforts to scale-up treatment of HIV with antiretroviral (ARV) medication for those in need
- High-quality treatment programmes for people with drug addictions
- Involving PLWHA in national advocacy and asking for their help in designing, developing and evaluating programmes and policies
- Sufficient funding for PMTCT services and staff training
- Publicising programme successes by inviting national and local politicians to clinics to see how PMTCT programmes work
- Communicating the problems and solutions to those who have the power and authority to address issues that require national-level solutions (e.g., national shortages in ARV medications)
- Educating national leaders about the importance of PMTCT programmes

- Having national leaders serve as role models in their professional and personal lives
 - Encourage leaders to hire staff who are HIV-infected
 - Encourage leaders to praise the good work of PMTCT clinics to the public and to the press
 - Encourage leaders to visit an HIV/AIDS service organisation
 - Encourage leaders to speak out against emotional, verbal and physical abuse directed at women infected with HIV
 - Remind leaders to promote funding of HIV/AIDS care programmes
 - Suggest that leaders be tested for HIV

Community Level

HIV education

HCWs can play an important role in providing HIV information and education to members of the community, especially key opinion leaders, home birth attendants (HBAs), traditional healers, healthcare staff in referring organisations, religious leaders and managers in private industry.

Educational and informational activities can accomplish the following:

- Increase knowledge about HIV (including routes of transmission)
- Raise awareness of issues faced by PLWHA
- Increase awareness of the fact that newly diagnosed women may face domestic violence
- Communicate, through community leaders, that violence against women is inappropriate, immoral and illegal
- Encourage leaders to make their workplaces HIV-friendly e.g., implement policies that ban discrimination against PLWHA, provide flexi-time so that HIV-infected staff can attend clinic appointments,
 - and sponsor HIV education sessions for staff
- Promote PMTCT activities as an central part of healthcare and HIV/AIDS prevention and treatment
- Educate the community about PMTCT interventions (including ARV prophylaxis and safer infant-feeding practices), stressing the importance of community and family support in PMTCT programmes
- Increase referrals to and from PMTCT services, especially to care and treatment clinics (CTCs)
- Secure the involvement of community members and PLWHA in organising, developing and delivering HIV education, prevention and support programmes (See *Module 7: Comprehensive Care and Support for Pregnant Women, Mothers and Families with HIV Infection* for a more detailed discussion of community outreach and mobilisation.)

HIV/AIDS education and training for HCWs

HCWs working in PMTCT have many responsibilities, from clinical management and treatment of patients, to working with communities on healthcare issues. Training projects for HCWs can increase their understanding of HIV/AIDS and reduce negative attitudes towards PLWHA. HCWs are also encouraged to provide HIV/AIDS education and training to members of the community, especially key opinion leaders, HBAs, traditional healers, healthcare staff in referring organisations, religious leaders and managers in private industry. It is important that those in charge of the clinics and hospitals allow and encourage HCWs to perform this mission.

Community awareness of PMTCT interventions

Community education and mobilisation activities increase community awareness of PMTCT interventions, which helps men and women recognise their roles and responsibilities in protecting themselves and their families against HIV infection.

Greater community awareness should also strengthen social support for the partner, extended family and community. The people who cope the best with their HIV infection tend to be those who have social and family support. For example, families and close friends can help remind those with HIV infection to take their medicine. If the person with HIV is pregnant, family members can ensure that she gives birth at a health centre and that she takes her ARV prophylaxis. They can also help ensure that the infant receives ARV prophylaxis and support infant-feeding choices that reduce the risk of HIV transmission.

Community partnerships

PMTCT HCWs and programme managers should try to build partnerships with mosques, churches, schools and social or civic organisations when developing PMTCT services. Promoting PMTCT services in community organisations will enhance sustainability and will help develop a broad base of support for the PMTCT initiative.

Some ways to facilitate the building of community partnerships are:

- Maintain awareness of community health and development activities (e.g., income-generating projects, support groups for PLWHA, organised women's groups and health education campaigns) that could benefit PMTCT clients or provide a place for discussion about PMTCT and HIV. (See Module 7, Appendix 7-H: *Handout on National HIV Support Networks*.)
- Understand the HCW's role as a liaison between the community and the PMTCT programme
- Work with other reproductive and child health (RCH) programmes and community health outreach services to include PMTCT messages (e.g., including infant-feeding counselling and follow-up postnatal home visits)
- Participate in community meetings with influential religious leaders to discuss the basic facts about HIV/AIDS and PMTCT

Other community level interventions

Additional community level interventions may include the following:

- Exchanging information and ideas among HCWs and other caregivers of PLWHA through roundtable discussions and social activities
- Ensuring that PMTCT interventions are taught in HCW curricula for nurses, midwives and doctors

PLWHA involvement

Invite PLWHA to become involved in national and local initiatives. Doing so will empower them. It will also help the community realise that PLWHA are not the cause of the HIV/AIDS problem but are part of the solution. Involving PLWHA in initiatives will:

- Help PLWHA gain and practise life skills in communication, negotiation, conflict resolution and decision-making, which empowers them to challenge HIV/AIDS-related stigma and discrimination
- Encourage PLWHA to join together to challenge stigma and discrimination
- Promote the active involvement of PLWHA in national and local activities to foster positive perceptions of people living with HIV
- Support the establishment of PLWHA organisations and networks, including those that enable people to demand recognition and defend their rights

Training programmes for PLWHA

Develop and implement training programmes for PLWHA to help them advocate for their rights and take an active role in their own health care. By participating in interventions (such as PMTCT services or HIV prevention and care education) as volunteers, advisors, board members or paid employees, PLWHA demonstrate their ability to remain productive members of the community. This helps mainstream the experience of living with HIV infection.

PMTCT Programme Level

Although HCWs and managers in PMTCT programmes often reflect the communities in which they are based, they can take the lead in challenging long-held community perceptions and practices, including stigmatisation of and discrimination against PLWHA and PMTCT patients.

Role of PMTCT programme managers

PMTCT programme managers play an important role in developing, implementing and enforcing policies and procedures, including those on discrimination and confidentiality. In addition, programme managers can help ensure that staff follow Standard Precautions, which may reduce the stigma due to fear of infection.

Examples of actions managers can take to reduce stigma and discrimination:

- Maintain policies against discriminatory recruitment and employment practices.
- Support workers who are HIV-infected so they continue to perform well in their positions.
- Offer flexible hours and access to healthcare services.
- Establish policies that guarantee all patients equal treatment regardless of HIV status.
- Ensure procedures for reporting discrimination and protocols for disciplining staff that breach the non-discrimination policy.
- Promote the programme's policies to staff and patients, and remind patients that they can file a complaint if they feel they have been the target of discrimination.

Integrate PMTCT interventions into antenatal care (ANC) services

PMTCT services should be integrated into and supported by the local community. Mainstreaming (or bundling) HIV services with routine ANC services helps reduce stigma associated with HIV/AIDS.

Managers should work to:

- Integrate PMTCT interventions into mainstream ANC services for all women.
- Offer HIV counselling and testing to all clinic attendees, regardless of their perceived HIV risk.

PMTCT services are offered in the continuum of ANC care. Therefore, labels such as “PMTCT Nurse” should not get attached to HCWs providing HIV/AIDS services to PLWHA. This is a way to avoid labels such as “syphilis nurse” that have been applied in the past to other stigmatised diseases.

Encourage the participation of male partners

Develop ways to increase the participation of male partners in all aspects of PMTCT services. Educate partners about PMTCT interventions (including ARV prophylaxis and modified infant-feeding practices) and stress the importance of partner testing, and partner and family support in PMTCT. For example, two clinics in Kenya invited men to visit the PMTCT clinic for counselling and testing and PMTCT education designed for a male audience. As a result of these interventions, the programme:

- Improved spousal communication about PMTCT
- Increased HIV testing among male partners of PMTCT patients
- Increased HIV test disclosure rates for both partners

Offer group or individual education sessions (on-site and off-site), which can help draw attention to the role that partners play in HIV transmission and reduce stigmatisation of women. Couple counselling offers another opportunity to reduce the blame that can be directed at women and emphasise the couple's shared responsibility in PMTCT.

When male partners do not attend ANC clinics, PMTCT programmes should reach out to them in male-friendly settings such as sports stadiums, taxi stands and markets.

Provide healthcare worker training

Educate and train HCWs. The success or failure of a PMTCT programme depends upon the attitudes, skills and experience of its employees. Training HCWs and clinic staff at all levels (manager, nurse, midwife, physician, social worker, counsellor or outreach worker, receptionist and other support staff) is critical to the success of a PMTCT initiative.

Employee training should include:

- Complete and accurate information about the transmission of HIV and the risks factors for infection
- Ongoing activities that address HIV-related stigma

In addition to presenting information, it is important for educational initiatives to address employee attitudes, correct misinformation and teach the clinical skills to care for HIV-infected clients.

Educate HCWs to better understand the perspectives and rights of PLWHA and their families. Without adequate education, staff may have irrational fears, practise inappropriate or substandard care and use stigmatising language and behaviour. Education can also correct assumptions about the social and economic lifestyle of PLWHA and encourage participants to examine their prejudices.

During training activities, strive to increase awareness of the language used to describe HIV/AIDS and PLWHA. The training should include:

- Exercises designed to encourage participants to explore personal attitudes and prejudices that might lead them to use stigmatising language.
- Summaries of confidentiality, anti-discrimination and infection control policies as well as the consequences of policy breaches and grievance procedures at the PMTCT site.

If possible, at least one member of the PMTCT staff should have special training in HIV counselling and testing and infant feeding. If possible, a member of the staff should also receive additional training in screening, counselling and referral of women experiencing or at risk for domestic violence.

Ensure infection control

Programme managers can help ensure that all staff follow Standard Precautions, which may reduce the stigma associated with fear of infection. The manager can:

- Update the facility's infection control policy as necessary.
- Ensure infection control by providing all HCWs with the necessary equipment and supplies (including high-quality, well-fitting gloves) needed to adhere to infection control

policies and prevent transmission of HIV in the workplace (See *Module 8: Safety and Supportive Care in the Work Environment*).

- Use Standard Precautions for all patients, regardless of assumed or established HIV status.
- Discipline employees who knowingly breach the Standard Precautions guidelines.
- Make post-exposure prophylaxis (PEP) accessible to staff in cases of accidental exposure to blood and body fluids as per national guidelines.

Patient confidentiality

Safeguard patient confidentiality by developing policies and procedures. Confidentiality in healthcare facilities is also discussed in *Module 4: HIV Counselling and Testing for PMTCT*.

Confidentiality policies:

- Provide directions on how to record and securely store patient information
- Ensure that neither PLWHA nor their medical files (whether paper or electronic) will be labelled to reveal HIV status
- Ensure that all patient consultations, from the receptionist to the doctor, will respect personal information

An institution's confidentiality policy should stress that all personal conversations and consultations take place in private settings. It should also establish:

- Policies for disclosure of medical information to a patient's family (which should only occur with the patient's informed consent)
- Policies for addressing and disciplining breaches of confidentiality
- Steps patients can take to address breaches of confidentiality
- Requirements for staff confidentiality training

PMTCT Healthcare Workers

PMTCT HCWs can address stigma in their work settings in a number of ways.

Serve as role models

PMTCT staff should ensure that they treat PLWHA as they would clients assumed to be uninfected. HCWs are role models and their attitudes toward PLWHA are often imitated in the community. The healthcare staff should aim to normalize all casual contacts with PLWHA. *Because HCWs are role models, it is important that they are aware of their feelings, thoughts and attitudes about HIV. It is their professional duty to ensure that these attitudes do not have a negative effect on the care provided to their clients.*

Knowing the local community

Get to know the local community, which will help to identify local HIV-related stereotypes and rumours. Ensure that misconceptions are addressed at appropriate times during PMTCT services. In many cultures, for example, women who do not breastfeed their infants may be labelled as HIV-infected. In such cultures, PMTCT workers should address this stereotype during counselling and educational sessions and emphasise the importance of safer infant-feeding practices for reducing MTCT.

Peer and community support

Facilitate peer and community support. Recognise that support groups in the ANC setting provide an opportunity for pregnant women who are HIV-infected to share experiences and be linked to other support services. PMTCT programmes can facilitate such support groups by:

- Supporting mentoring programmes. South Africa's Mothers-to-Mothers-to-Be is a mentorship programme for pregnant women who are HIV-infected. Mothers who are

HIV-infected and have recently given birth return to the ANC facility as mentors to educate, counsel and support pregnant women who are HIV-infected. The mother-mentors share personal experiences to encourage adherence to treatment, help with making infant-feeding decisions and assist with negotiating care and support services. The mentoring has resulted in better understanding and greater acceptance of interventions to reduce MTCT.

- Encouraging peer support. Encourage PLWHA to pair up with another person—HIV-infected or not—who can provide friendship, companionship, advice, or mentoring.
- Involving PLWHA in PMTCT programmes can help address stigma and discrimination issues and promote better understanding of and support for those with HIV infection.

Counselling and education for PLWHA

Counselling and education for PLWHA, provided either within the PMTCT service or through linkages to other services, can address HIV-related stigma in a number of ways.

Counsellors can encourage, empower and support PLWHA to disclose their HIV status to family and eventually to friends. As more people disclose their HIV status, PLWHA become more visible, which encourages community acceptance of PLWHA.

Counsellors should be trained to ask all their patients, particularly women, about domestic violence. Women found to be at risk of physical, verbal, or emotional abuse should receive support and referrals.

Women's rights

Advocate for women's rights. Ensure that women diagnosed with HIV are educated about their rights and know where to turn for help, including legal advice, to challenge discrimination and stigmatisation.

Exercise 3.3 PLWHA Panel	
Purpose	To give PLWHA an opportunity to share their experiences in the healthcare system and to help educate HCWs.
Duration	60 minutes
Instructions	<ul style="list-style-type: none"> ▪ Pay special attention to the remarks of the PLWHA about their experiences with stigma and discrimination in the healthcare setting, family, and/or community. ▪ Participants can address questions, keeping in mind that questions should be non-judgemental, to panellists as facilitated by the moderator.

Module 3: Key Points

- While stigma reflects an attitude, discrimination is an act or behaviour.
- Stigma and discrimination are interconnected. Stigmatising thoughts can lead to discriminatory behaviours.
- PMTCT programme staff has a responsibility to respect the rights of *all* women and men, regardless of their HIV status.
- HIV/AIDS-related stigma and discrimination may discourage PLWHA from accessing key HIV services. Stigma and discrimination may also:
 - Discourage disclosure of HIV status
 - Reduce acceptance of safer infant-feeding practices
 - Limit access to education, counselling and treatment for people infected with HIV even when services are available and affordable
- PMTCT programme staff can help reduce stigma and discrimination on the national level, in the community and in the healthcare setting.
- Encourage PMTCT staff to serve as role models by treating PLWHA as they would treat clients assumed to be HIV-negative.
- It is important for HCWs and staff to explore their own attitudes and behaviours that could be stigmatising and discriminatory.

APPENDIX 3-A International Guidelines on HIV/AIDS and Human Rights

GUIDELINE 1:

States should establish an effective national framework for their response to HIV/AIDS that ensures a coordinated, participatory, transparent and accountable approach, integrating HIV/AIDS policy and programme responsibilities across all branches of government.

GUIDELINE 2:

States should ensure, through political and financial support, that community consultation occurs in all phases of HIV/AIDS policy design, programme implementation and evaluation and that community organisations are enabled to carry out their activities, including in the field of ethics, law and human rights, effectively.

GUIDELINE 3:

States should review and reform public health laws to ensure that they adequately address public health issues raised by HIV/AIDS, that their provisions applicable to casually transmitted diseases are not inappropriately applied to HIV/AIDS and that they are consistent with international human rights obligations.

GUIDELINE 4:

States should review and reform criminal laws and correctional systems to ensure that they are consistent with international human rights obligations and are not misused in the context of HIV/AIDS or targeted against vulnerable groups.

GUIDELINE 5:

States should enact or strengthen anti-discrimination and other protective laws that protect vulnerable groups, people living with HIV/AIDS and people with disabilities from discrimination in both the public and private sectors, ensure privacy and confidentiality and ethics in research involving human subjects, emphasise education and conciliation and provide for speedy and effective administrative and civil remedies.

GUIDELINE 6:

States should enact legislation to provide for the regulation of HIV-related goods, services and information, so as to ensure widespread availability of qualitative prevention measures and services, adequate HIV prevention and care information and safe and effective medication at an affordable price.

GUIDELINE 7:

States should implement and support legal services that will educate people affected by HIV/AIDS about their rights, provide free legal services to enforce those rights, develop expertise on HIV-related legal issues, and utilise means of protection in addition to the courts, such as offices of ministries of justice, ombudspersons, health complaint units and human rights commissions.

GUIDELINE 8:

States, in collaboration with and through the community, should promote a supportive and enabling environment for women, children and other vulnerable groups by addressing underlying prejudices and inequalities through community dialogue, specially designed social and health services and support to community groups.

APPENDIX 3-A International Guidelines on HIV/AIDS and Human Rights *(continued)*

GUIDELINE 9:

States should promote the wide and ongoing distribution of creative education, training and media programmes explicitly designed to change attitudes of discrimination and stigmatisation associated with HIV/AIDS to understanding and acceptance.

GUIDELINE 10:

States should ensure that government and the private sector develop codes of conduct regarding HIV/AIDS issues that translate human rights principles into codes of professional responsibility and practice, with accompanying mechanisms to implement and enforce these codes.

GUIDELINE 11:

States should ensure monitoring and enforcement mechanisms to guarantee the protection of HIV-related human rights, including those of people living with HIV/AIDS, their families and communities.

GUIDELINE 12:

States should cooperate through all relevant programmes and agencies of the United Nations system, including UNAIDS, to share knowledge and experience concerning HIV-related human rights issues and should ensure effective mechanisms to protect human rights in the context of HIV/AIDS at the international level.

Source: OHCHR, UNAIDS. 2002. *HIV/AIDS and Human Rights International Guidelines, Revised Guideline 6: Access to prevention, treatment, care and support*. Geneva, August 2002, pp 10–12.

APPENDIX 3-B Alternative Exercise 3.4

(In case PLWHA panel is not possible)

<i>ALTERNATIVE Exercise 3.4 Stigma and discrimination: Case study</i>	
Purpose	<p>To explore our culturally-conditioned feelings and attitudes about HIV - related stigma and discrimination.</p> <p>To discuss breaches of confidentiality that may perpetuate stigma and discrimination.</p> <p>To consider ways in which HCWs can help combat HIV/AIDS-related stigma and discrimination.</p>
Duration	60 minutes
Instructions	<ul style="list-style-type: none"> ▪ Participants will be divided into four small groups of 3-5 people. ▪ Each small group will take 15 minutes to review and discuss the case study below and address assigned questions as follows: <ul style="list-style-type: none"> ▪ Group 1: Discuss the issues of stigma and discrimination highlighted in the case study ▪ Group 2: Present ideas for ways that PMTCT services can minimise stigma and discrimination ▪ Group 3: Discuss community-based initiatives that could be developed to reduce stigma and discrimination ▪ Group 4: Consider national policy/legal changes that could be advocated ▪ Each group will then summarise the primary points of their discussion on a flipchart paper. ▪ The groups will reconvene and present the primary points of their discussion to participants from the other groups.

Case study 1

Two PMTCT nurses, Grace and Amira, were in the ANC clinic break room. Their conversation began with the usual discussion about family and children and then moved to a discussion about Robina, a client they saw earlier in the day. Grace and Amira remembered Robina quite clearly from the morning clinic, maybe because she was an attractive and outgoing woman or because she was the first client of the morning. They could not help but talk about the fact that Robina, who is now 5 months pregnant with her first child, was just diagnosed with HIV. Additionally, they could not help speculating whether Robina's husband (who is well-known in the community) is also HIV-infected—and if he is, where he got infected.

The nurses were unaware that the window in the break room was open to the outside courtyard, where Lela, an afternoon ANC patient, was standing outside with her toddler waiting for an appointment.

Lela, who is related to Robina by marriage, went straight home and told her husband about Robina's HIV diagnosis. The next day Lela's husband told a friend at work who, a week later, mentioned the story in front of Robina's husband. Robina's husband went home that night, accused her of being HIV-infected and asked her to leave the house.

Questions to consider

Group 1: Discuss the issues of stigma and discrimination in the case study.

- What does this case study highlight about HIV/AIDS-related stigma and discrimination? (e.g., How was Robina stigmatised? How was Robina discriminated against and by whom?)

Group 2: Present ways PMTCT services can minimise stigma and discrimination.

- What PMTCT policies should be in place in the ANC clinic to prevent HIV/AIDS-related stigma and discrimination?

Group 3: Discuss community-based initiatives that could be developed to reduce stigma and discrimination.

- What community-based initiatives could be implemented to reduce the kind of stigma and discrimination faced by Robina and her husband and, indirectly, her child?

Group 4: Consider national policy or legal changes that could be made and advocated for.

- Is it possible to influence national policy or legal changes that would help Robina and her family, or others going through similar challenges, to handle difficult periods such as this? If so, how would you, as a HCW, try to promote change at this level?

Case Study 2

Susan is a nurse at the local clinic and has recently been trained in PMTCT. She wants to use what she has learned and share it with those around her.

- What are some actions Susan can take to promote PMTCT in the community?

Module 4 Counselling and Testing



Total Module Time: 455-505 minutes (7 hours, 35 minutes – 8 hours, 25 minutes)

MODULE OBJECTIVES

After completing the module, the participant will be able to:

- Describe the importance of having effective communication and counselling skills when working in PMTCT settings.
- Describe the importance of integrating counselling and testing for PMTCT into antenatal care (ANC) settings.
- Explain the difference between provider-initiated and client-initiated testing and discuss provider-initiated testing as the national approach.
- Discuss the healthcare worker's role in maintaining confidentiality.
- Describe the elements of pre-test information and counselling.
- Provide information to pregnant women about HIV testing.
- Describe the steps involved in post-test counselling.
- Describe the importance of post-test counselling and counselling couples.
- Explain the meaning of "discordant" results in couples testing.
- Identify the needs of women who are newly diagnosed with HIV.
- Describe HIV testing processes.
- Describe steps taken in national testing algorithm
- Perform a rapid HIV test correctly.
- Explain the meaning of positive (reactive) and negative (non-reactive) HIV test results.
- Describe steps taken to assure quality in testing.

UNIT 1 Overview of HIV/AIDS Counselling

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Describe the importance of effective communication and counselling skills when working in PMTCT settings.

Basic Concepts in HIV/AIDS Counselling

HIV/AIDS counselling is a confidential dialogue between an individual and a counsellor aimed at enabling the individual to make personal decisions in the context of HIV/AIDS.

In this module, the term **counselling** refers to discussions between healthcare workers (HCWs) and clients specific to HIV testing. **PMTCT counsellors** may be HCWs such as doctors, nurses or midwives. Together, counselling and testing can improve a person's understanding of HIV/AIDS and help the person make informed choices for the future.

Communication skills for counselling

The HCW uses verbal and non-verbal behaviour to help clients through the process of relationship building, exploration, understanding and action. People use these basic communication skills knowingly or unknowingly in everyday life. They include:

- Active listening
- Attending skills
- Paraphrasing
- Reflecting feelings
- Questioning
- Clarifying
- Summarizing

An overview of each counselling skill follows.

Active listening

Active listening seems like a simple concept but people often fail to listen to one another. Active listening helps establish trust and a relationship. It helps gather information and helps clients assume responsibility. People want to know that they have the whole attention of their counsellor, not just physical presence but psychological and emotional attention.

Active listening involves:

- Listening to and understanding the client's verbal messages.
- Observing and taking note of the client's non-verbal behaviour—posture, facial expressions, movement, and tone of voice.
- Listening for the client's social and cultural context—trying to understand the client as a whole person and to be sensitive to his or her social setting.
- Listening to the client's negative comments or feelings – making note of things the client says that may have to be challenged.

Avoid barriers to active listening. A counselling session should not be interrupted by phones, note-taking, noises or visitors.

Attentive skills

Attentive behaviours are physical behaviours that demonstrate that you are actively listening to the client and that you care about what the client is saying. These behaviours invite the clients to relax and talk about themselves and their problems. To attend to clients, counsellors can use the following “ROLES” skills:

ROLES

R – A relaxed and natural attitude with clients is important. Do not fidget or chat nervously.

O – Open posture should be adopted. Crossing one's legs or arms can signal that you are critical of what the client is saying or are not listening. Using an open posture shows that you are open to the client and to what the client is saying.

L – Leaning forward toward the client at times is a natural sign of involvement. A counsellor's physical involvement helps communication.

E – Maintain eye contact, without staring or glaring. Maintaining good eye contact is a way of communicating your presence and interest. If a counsellor is uncomfortable or unwilling to make eye contact with certain clients, he or she should address this issue with another healthcare worker.

S – Sitting squarely facing another person shows involvement. If for any reason this may be threatening, then an angled position may be helpful. The quality of your presence is the most important element.

These physical behaviours convey respect and genuine caring. However, these are just guidelines and not rigid rules, and counsellors must consider the client's culture as well as their own.

Paraphrasing

When using paraphrasing, a counsellor listens to what a client says and repeats the idea back, using different words. For example, if a client says, "I'm not able to tell my partner about my HIV test result," the counsellor may paraphrase by saying, "Talking to your partner about your result sounds like something that you are not comfortable doing." The counsellor can then say, "Let's talk about that". Paraphrasing shows that the counsellor is actively listening and gives the counsellor an opportunity to address certain issues in more detail.

Reflecting feelings (Reflective listening)

This involves understanding a client's emotional responses and communicating this back to him or her. For example, if a client says, "I am worried that I will suffer a lot with HIV," the counsellor might reflect these feelings back to the client by saying, "You are feeling anxious and fearful about the discomfort and pain that HIV may bring you." Like paraphrasing, reflective listening encourages dialogue and helps the client know that the HCW has heard what she has said and understands her perspective.

Questioning

Questioning helps the counsellor to identify, clarify and break down problems into more manageable components. Questioning involves the use of open-ended questions that begin with 'how', 'what', 'when', or 'can you tell me about...?' Open-ended questions encourage responses that lead to further discussion. Counsellors should try to avoid questions that have a yes or a no answer which can turn off or stop active discussion. For example, instead of asking, "Are you concerned about your HIV test results?" a counsellor may ask, "What concerns do you have about your HIV test?"

Clarifying

Clarifying prevents misunderstanding and helps sort out what has been said. For example, if a client says, "I can't exclusively breastfeed my baby," the counsellor may ask, "In what way is exclusive breastfeeding a concern for you?"

Summarizing

Summarizing pulls together themes of the counselling discussion so that the client can see the whole picture. It also helps to ensure that the client and the counsellor understand each other.

- The counsellor should review the important points of the discussion and highlight any decisions made.
- The counsellor can summarize key points at any time during the counselling session, not only at the end.
- Summarizing can offer support and encouragement to clients to help them carry out the decisions they have made.

Basic Counselling Skills

Many skills contribute to successful counselling. Counselling requires HCWs to be aware of their strengths and weaknesses as counsellors, as well as their fears or anxiety about HIV. HCWs who counsel must explore their own feelings. They should be aware of themselves, how others affect them, and their effect on others.

Qualities of an effective counsellor

- Competent
- Trustworthy
- Empathetic
- Respectful
- Flexible
- Non-dominant
- Non-judgmental

Counselling Process

Counselling is a process that takes place within the counsellor-client relationship. The process is sometimes split into four stages that may overlap. These stages are relationship building, exploration, understanding and action (REUNDA):

Relationship building stage

Before any problems or issues can be discussed or solved, the counsellor needs to gain the trust of the client. This is done by using open body language and showing a genuine interest in the client by greeting her, offering her a seat, leaning forward when talking to her, making eye contact, and showing an interest in what the client has to say.

Exploration stage

In the beginning, the counsellor helps the client clarify his or her current problems, issues and opportunities. A goal of this stage is to establish a trusting relationship so that the client feels safe enough to be honest going forward. It is important that the counsellor concentrate on the client's agenda and not their own. A good counsellor helps the client be specific about his or her problem(s).

Possible client question— What are my **problems, issues, concerns and opportunities?**

Understanding stage

Also called the middle stage, a counsellor guides the client's insight and promotes new perspectives on problem(s). Now a relationship has developed and the client has talked about his or her issues. Counsellors use their skills to draw together themes, offer new ways of looking at them, provide empathy, help the client work in the moment, promote self-

disclosure, and help set appropriate goals. The client must feel supported, yet challenged, to face the difficulties ahead. By the end of this stage, the client should have an understanding of how he or she wants to change.

Possible Client question— What do I **need or want** in place of what I have?

Action Stage

The goal of the action stage is to help the client develop strategies to address his or her needs or wants. The key tasks of the counsellor are to help the client make a realistic set of choices, decisions and plan of action. Always remember, the client chooses the course of action. The counsellor helps the client problem-solve. In some models, the action stage is left to the end, while in others it is seen that clients need to act from the beginning.

Client's question— What **do** I do to get what I need or want?

The counselling process does not always follow these stages in order. The counsellor needs to be aware of the stage and, when appropriate, help move the client to the next stage. This decision to move to the next level is the client's; the counsellor offers guidance but does not make the decisions.

Exercise 4.1 Basic counselling skills: Demonstration and practise	
Purpose	To demonstrate counselling skills To practise counselling skills with special emphasis on paraphrasing, reflecting feelings, questioning, and clarifying
Duration	45 minutes
Instructions	<ul style="list-style-type: none"> ▪ Participants should review the exercise and Appendix 4-A: <i>Counselling Skills and Technique Checklist</i>, prior to the training, if possible. ▪ After the trainer demonstrates a role-play with a participant volunteer acting as a client, participants will be divided into groups of three to practise communication skills using the checklist in Appendix 4-A. Each group will identify a counsellor, a client and an observer. Each person will have an opportunity to talk to each other about personal concerns about working in the area of HIV. ▪ The counsellor will practice good communication skills such as greeting the client, paraphrasing, reflecting feelings, questioning and clarifying. ▪ The observer will use Appendix 4-A: <i>Counselling Skills and Technique Checklist</i> as observation guide. After 2-3 minutes of the exercise, the observer will provide feedback on each of the skills and techniques observed. The key points should focus on things that the “counsellors” did to improve their counselling. ▪ This will be repeated until everyone has an opportunity to practise the role of the counsellor. ▪ Each group of three will identify key points from interactions that will assist counsellors in improving these skills, and will be asked to write these responses on a flip chart. ▪ The entire group will then reconvene and report key points to assist counsellors in improving communication skills.

Techniques of counselling

- Individual counselling

This is a one-to-one, helping relationship in which the counsellor helps the client to solve or cope with a problem or address a specific need.

Group pre-test information education

- This is when information is provided to the clients in a group before testing.

Skills needed for group education:

- Allowing all participants to speak
- Non-domination over the group
- Coping with dominating persons or those who become emotionally distressed in a group
- Adhering to basic principles of counselling

Guidelines for conducting group education:

- Establish good relationship
- Ensure group participation
- Share information
- Handle special issues

Group counselling

This is when the counsellor works with a group to facilitate the sharing and seeking of a solution to a common problem. It includes mutual support such as peer support groups for pregnant women to share their experiences for coping and living with HIV.

Professional Ethics in Counselling

Counsellors are expected to embrace a standard of morality that avoids behaviours that would harm their clients and the society intentionally or unintentionally. This includes maintaining confidentiality (see Unit 2).

Common counselling mistakes

The principles of counselling are easy to learn but difficult to apply. Some common counselling mistakes include:

- Controlling the discussion instead of encouraging the client's open expression of feelings and needs.
- Judging the client—making statements that show that the client does not meet the counsellor's standards.
- Preaching to a client—telling clients how they should behave or lead their lives. For example, saying, "You never should have trusted that guy, now you have created a big problem for yourself."
- Labelling a client instead of finding out their individual motivations, fears or anxieties.
- Reassuring a client without even knowing his or her health status—for example, telling a client, "You have nothing to worry about."
- Not accepting the client's feelings—saying, "You shouldn't be upset about that."
- Advising, before the client has collected enough information or taken enough time to arrive at a personal solution.
- Interrogating—asking accusatory questions. Questions that start with "why...?" can sound accusatory.

- Encouraging dependence—increasing the client’s need for the counsellor’s presence and guidance.
- Persuading or coaxing—trying to get the client to accept new behaviour by flattery or fakery.

Role of the Healthcare Worker (HCW)

The role of a HCW is to support and assist the client’s decision-making process by:

- Listening to the client
- Understanding the choices that need to be made
- Helping the client explore her/his circumstances and options
- Helping the client develop self-confidence, enabling her/him to carry out the decision made

The HCW is not responsible for solving all of the client’s worries or concerns. The HCW is not responsible for the client’s decisions.

UNIT 2 Counselling and Testing for PMTCT

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the importance of integrating counselling and testing for PMTCT into antenatal care (ANC) settings.
- Explain the difference between provider-initiated, client-initiated testing, and discuss provider-initiated testing as the national approach.
- Discuss the HCW's role in maintaining confidentiality.

Counselling and testing for PMTCT

Specific PMTCT interventions depend on whether a woman knows her HIV status. In the context of PMTCT, counselling and testing is a flexible intervention that is integrated into settings where pregnant women, and women of childbearing age receive services—RCH, antenatal, labour, and delivery, family planning and others.

Counselling in PMTCT occurs during all stages of antenatal care (ANC), labour, delivery and postpartum care, and should involve not only the pregnant woman but also her partner and family. Counselling is critical to the ongoing treatment, care and support to the mother, her family and the newborn child and should observe all the basic concepts and communication skills in HIV/AIDS counselling.

The benefits of counselling and testing for PMTCT

The primary advantage of HIV counselling and testing is that it helps people to learn their HIV status.

For women who test HIV-negative, HIV counselling and testing in PMTCT settings provides information and support to remain uninfected.

For pregnant women who are HIV-positive and know their status, counselling may help them:

- Make informed decisions about their pregnancy.
- Receive appropriate and timely interventions to reduce MTCT including:
 - Antiretroviral treatment or prophylaxis.
 - Infant-feeding counselling and support.
 - Information and counselling on family planning.
 - Education on the importance of delivering in a setting where Standard Precautions and safer obstetric practices are in effect (see *Module 8: Safe and Supportive Care in the Work Setting* for more information about Standard Precautions).
- Receive information and counselling on the prevention of HIV transmission to others.
- Obtain referrals for follow-up and ongoing healthcare (including antiretroviral treatment, care, and support) for themselves, their partners, their children, and their families.
- Disclose their test results safely and appropriately to e.g. partners, family members, friends, and others.

“Provider-initiated” (routine) and “Client-initiated” (VCT) approaches to HIV testing in PMTCT settings

HIV testing strategies and protocols often differ depending on the setting in which testing and counselling occurs. The protocols for HIV testing at counselling and testing centres differ

from the diagnostic testing protocols in hospital settings, which in turn differ from the testing protocols in ANC and labour and delivery settings.

There are two approaches to HIV testing. Each provides basic information to the client about HIV and the risks and benefits of testing. The approaches differ in how clients *decide* to be tested for HIV and how they *agree* to be tested. The differences are summarized as follows:

Provider-initiated approach: In the provider-initiated approach, all clients receive HIV counselling and testing unless they specifically refuse to be tested or “opt-out.” HIV testing is offered as a routine part of standard care much like syphilis screening. The client is given information about the HIV test and an opportunity to decline the test. This information may be provided individually, as in pre-test information, or in a group. The provider-initiated approach emphasizes that HIV testing is an expected part of the health system and the ANC in particular. However, as with all tests, the client has a right to refuse testing.

Client-initiated approach: In the client-initiated approach (sometimes known as VCT), the client also receives information about HIV testing. After receiving the information, the client is given the choice of refusing or consenting to an HIV test. This option is presented in a neutral, supportive manner. Only clients who specifically request to be tested or “opt-in” are tested, and their informed consent—written or oral—must be clearly established. This approach requires an active step by the individual client to agree to be tested.

National ANC testing strategy: Provider-initiated

The provider-initiated strategy should be used for HIV counselling and testing in the ANC and labour and delivery settings.

- Provider-initiated testing helps make HIV testing more “normal” and makes the test a routine part of ANC.
- Provider-initiated testing is likely to increase the number of women who test for HIV.
- PMTCT programme staff must keep to the guiding principles of counselling and testing (informed consent, confidentiality and the provision of post-test services).

Differences between provider-initiated/routine and client-initiated/VCT HIV counselling and testing services

Provider Initiated / Routine	Client Initiated / VCT
<ul style="list-style-type: none"> • Individual is seeking medical care • Client receives information about HIV testing in PMTCT (either in a group or on an individual basis) • Client is given the opportunity to ask questions and the HCW ensures that the client understands HIV testing in the context of PMTCT • Unless client refuses, HIV test is performed 	<ul style="list-style-type: none"> • Individual chooses to seek HIV counselling and testing • Client receives information about HIV testing in PMTCT (either in a group or on an individual basis) • Client is given the opportunity to ask questions and the HCW ensures that the client understands HIV testing in the context of PMTCT • Client specifically requests the HIV test and gives verbal or written consent

Exercise 4.2 Removing barriers to implementing provider-initiated testing: Small group discussion	
Purpose	To share ideas about practical ways to remove barriers to implementing the provider-initiated strategy in a variety of ANC settings
Duration	45 minutes
Instructions	<ul style="list-style-type: none"> ▪ Participants will share how HIV testing is carried out in their facilities with the large group, and then the group will be asked to describe how provider-initiated testing might be implemented or improved in that setting. ▪ When several different settings have been described, and recommendations for protocols have been identified, the larger group will be divided into smaller groups based on work setting. ▪ Each small group will review and refine the protocol recommendations identifying barriers and proposing solutions for effective implementation of the provider-initiated approach. ▪ Each group will be asked to record its recommendations on flip chart paper. ▪ Each group will identify a volunteer who will present some of the key discussion points to the larger group.

Guiding Principles for Counselling and Testing in PMTCT Settings

The guiding principles for counselling and testing in PMTCT settings are:

- Confidentiality
- Informed consent
- Post-test support and services

Confidentiality

Maintaining confidentiality is an important responsibility of all HCWs and is essential to establishing and maintaining client trust. Information that is shared between HCWs and clients must be kept private. Clients should be informed that personal and medical information, including HIV test results, may only be disclosed to other healthcare providers in order to ensure that the client receives the appropriate medical care. HCWs should emphasize, however, that 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.

HCWs should try to hold post-test counselling sessions in as private a setting as possible. The client may not feel comfortable expressing emotions in full view of others.

All medical records and registers, whether or not they include HIV-related information, should be kept confidential and stored in a safe and secure place. Registration numbers should be used to identify clients instead of names. When possible, the same counsellor should be used for pre-test, post-test and ongoing counselling.

Informed consent

Informed consent is another guiding principle of counselling and testing; it is the process during which each client receives clear and accurate information about HIV testing to ensure that the client understands she has the right and the opportunity to decline testing.

One of the important objectives of PMTCT is to make HIV testing a routine or normal part of ANC. Consequently, within the context of PMTCT, written informed consent is not required.

However, it is the HCW's responsibility to make certain that the following elements of informed consent are addressed:

- Ensure an understanding of the purpose and benefits of testing, counselling and PMTCT services.
- Ensure an understanding of the counselling and testing process.
- Respect the client's testing decision.

Post-test support and services

The result of HIV testing should always be offered in person. Along with the result, appropriate post-test information, counselling and referral should also be offered.

- HIV test results and post-test counselling must be given to **all women**. Even HIV-negative women need test results and counselling so they can receive prevention messages and messages that encourage safer behaviour.
- HCWs should ensure privacy when providing HIV test results. Whenever feasible, they should provide test results in a private venue or room.
- HCWs should assure the client that the post-test session and the test results will be kept confidential.
- During the post-test counselling session, HCWs should inform the client that follow-up treatment, care and support are available, including support for disclosure when needed.

Exercise 4.3 Confidentiality: Role-play	
Purpose	To review and apply the principle of confidentiality in a post-test situation where the client knows she is HIV-positive.
Duration	35 minutes
Instructions	<ul style="list-style-type: none"> ▪ Refer to the role-play script on page 4-12 entitled, "Confidentiality Role-play." ▪ After the trainer's introduction, two participant volunteers will take part in a role-play in front of the room, as a HCW role and a client role. ▪ After the role-play, the volunteers will return to the group and the group will be asked the following questions: <ol style="list-style-type: none"> 1. Why is Clare, the HCW, concerned about not having a separate space to meet with Flora, the client? 2. How do you think Flora felt about this space and the privacy of this space? 3. Is the space appropriate for this interaction? 4. What can be done to improve privacy in this space? 5. What can HCWs and clinic staff do to keep a client's HIV status confidential? 6. Why was it important for Clare (the HCW) to tell Flora (the client) about confidentiality?

Exercise 4.3 Confidentiality role-play script	
<p>Introduction: Flora is returning to the ANC clinic for a follow-up visit after receiving a positive HIV test result. Today, she is 4 months pregnant. The HCW, Clare, is very busy this morning and expects the rest of the day to be at least as busy. She has asked the receptionist to organize the HIV reports. While organizing the reports, the receptionist recognizes Flora's name and notices that Flora is HIV-positive.</p> <p>When Flora arrives for her appointment, she notices that some of the HCWs are looking at her and whispering. When Clare calls Flora for her appointment, they are forced to sit in a corner of the waiting room because all of the client rooms are occupied.</p>	
<i>Clare</i>	Hello, Flora. I am glad to see you here on time for your follow-up appointment. Please sit down.
<i>Flora</i>	<p>Hello, Clare. I have been so sad and nervous about my recent positive HIV test. What does this mean for me and my family?</p> <p><i>Flora looks around. She can see the waiting area from her seat, and notices the clinic is crowded. Clare observes Flora looking towards the waiting area.</i></p>
<i>Clare</i>	I wish we had a private office to sit in Flora, but space is so limited here. I am certain that no one will hear us talking back here.
<i>Flora</i>	I just want you to know, Clare, that if my husband finds out, I will be in big trouble. Please tell me what to do.
<i>Clare</i>	<p>I am sorry, Flora. I hear you saying that disclosing your HIV status to your husband will be a very difficult thing to do.</p> <p><i>She pauses, giving Flora a chance to hear what she has just said.</i></p> <p>I know this is very difficult for you, but I am here to help you through this. Let us talk about your concerns around telling your husband.</p>
<i>Flora</i>	<p>Oh, Clare, what will I do? My husband and I were so excited about this pregnancy. Before we were married, I had another boyfriend, and I didn't always use protection.</p> <p><i>Flora starts to cry.</i></p>
<i>Clare</i>	You must be feeling very overwhelmed right now, Flora. Please know that everything you tell me will be held in strict confidence, including your test results. Let us now discuss some of the concerns you have about disclosing to your husband. Will that be ok?

Summary of national counselling and testing procedure

- All women attending ANC clinics are provided information about PMTCT and HIV counselling and testing in a group information session. They are also offered HIV counselling and testing as a part of routine antenatal care.
- Women have the opportunity to ask questions and clarify any concerns they may have at that point. They also may decline testing or delay testing to a later date. Unless she refuses to be tested, HIV testing is performed.
- After a woman is tested, she is *always* provided individual post-test counselling, regardless of her test result. During this session, she is offered assistance with disclosure to partners and family members, and given appropriate referrals.

HCWs must always ensure the 3C's principle is maintained while conducting testing in the ANC setting; that is, testing must be:

- **C**onfidential
- accompanied by **C**ounselling
- and conducted with **C**onsent.

UNIT 3 Pre-Test Information and Counselling

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the elements of pre-test information and counselling.
- Provide information to pregnant women about HIV testing.

Issues considered in the pre-test session

Group or individual pre-test education session for all pregnant women presenting to ANC:

- Discuss the basic pre-test information:
 - Basics of HIV and AIDS
 - How HIV is, and is not, transmitted
 - Prevention of HIV, including safer sex, including instruction and demonstration on using a condom
 - The interaction between STIs and HIV transmission, and prevention and treatment of sexually transmitted infections (STIs)
 - HIV testing procedures at site (when and how blood sample will be taken, when to expect the results), post-test counselling, and follow-up services
 - Advantages and disadvantages of HIV testing and knowing one's serostatus in the context of PMTCT
 - Discuss the meaning of the test, including the "window period"
 - Mother-to-child transmission of HIV (MTCT): in utero, intrapartum and postnatally through breastfeeding
 - Delivery by skilled attendant
 - Birth preparedness (which includes male involvement)
- Discuss the available opportunities for reducing MTCT:
 - Nutrition and self-care (micronutrients: daily iron and folate for pregnant women attending antenatal services and a single dose of Vitamin A within 2 months of delivery)
 - Use of antiretroviral drugs for PMTCT
 - Modification of obstetric care
 - Modification of infant feeding
- Encourage and promote couple counselling and shared confidentiality
- Encourage consulting with partner before and/or after testing, including disclosure
- Offer HIV testing in accordance with the national standard operating procedures, ensuring appropriate protection of client confidentiality

Appendix 4-B includes tips on facilitating a PMTCT health education session, including additional guidance on content and skills.

Exercise 4.4 HIV Pre-test counselling: Role-play	
Purpose	To explore the process of pre-test counselling and the techniques/skills required for success
Duration	40 minutes
Introduction	The focus of this exercise is to practise pre-test counselling and working with couples.
Instructions	<ul style="list-style-type: none"> ▪ Participants will be divided into four groups. ▪ Each group will be asked to write on a flip-chart the <i>chronological</i> events that need to take place during the pre-test session. ▪ The groups will conduct a role-play of an individual pre-test counselling session with a couple. ▪ One person in each group will play the role of the “counsellor.” The “counsellor” should go through the pre-test counselling steps (listed by the group on the flip-chart) for their role-play couple clients, Anna and Patrick. Refer to the role-play scenario below. ▪ As two participants play the roles of Anna and Patrick, the remaining members of the group will observe the role-play and complete the counselling checklist. ▪ Once the role-play is finished, roles will rotate so that everyone has a chance to practise role-playing. Observers will be asked to share their observations upon completion of each scenario. ▪ The participants will reconvene and the trainer will review the primary goals of pre-test counselling in PMTCT.

Exercise 4.4 HIV Pre-Test Counselling Role-play	
Scenario:	<i>Anna is 25 and pregnant with her second child. She has been married to Patrick for four years. On her first visit to the ANC clinic last month (when she was 21 weeks pregnant), she listened to the midwife’s HIV information/education session, but decided not to accept HIV testing until she had conferred with her husband. Now she is 25 weeks pregnant and is attending for the second time; Patrick has accompanied her to the clinic. He has some serious questions about HIV testing of pregnant women, and thinks it is somewhat of an invasion of privacy. When it is their turn, both Anna and Patrick see the ANC nurse together and the first issue on their agenda is the HIV test.</i>

UNIT 4 Post-Test Information and Counselling

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the steps involved in post-test counselling.
- Describe the importance of post-test counselling and how to counsel couples.
- Explain the meaning of “discordant” results in couples testing.
- Identify the needs of women who are newly diagnosed with HIV.

Post-test information and counselling

All HIV test results, whether positive or negative, must be given in person. Initial post-test counselling is provided to each client separately and privately, unless it is being conducted with a couple.

The post-test counselling session has several goals:

- Provide the client with the HIV test result.
- Help the client understand the meaning of the result.
- Provide the appropriate PMTCT essential messages.
- Offer support, information, and referral.
- Encourage risk-reducing behaviour.
- Explore and encourage disclosure and partner testing, if safe and appropriate.
- Encourage follow-up visits.

When the client is HIV-negative...

Post-test counselling provides an opportunity for a client who is HIV-negative to learn how to protect him/herself and his or her infant from HIV infection. It is important that women know that if they become infected during pregnancy or while breastfeeding, they face an increased risk of MTCT. Clients who test HIV negative on their first test, but may be in the window period (the 3 month period after becoming HIV infected), should be counselled to return for repeat testing. These clients should be re-tested 3 months after they were exposed or possibly exposed to HIV. Pregnant women who are tested early in pregnancy should also be re-tested later in pregnancy.

Post-test counselling—even for those who test negative for HIV—provides clients with a powerful incentive to adopt safer sex practices and an opportunity to:

- Discuss family planning.
- Understand the issue of discordance.
- Explore and encourage partner testing, if safe and appropriate.

Detailed steps in providing post-test counselling for women who are HIV-negative are in Appendix 4-C, *Post-test counselling checklists*.

When the client is HIV-positive...

Counselling clients who test positive for HIV is challenging for HCWs. Client reactions to results can range from acceptance to disbelief. The HCW must remain non-judgmental, supportive and confident throughout the counselling process. HCWs should remember that they have the skills to provide difficult information to clients.

If clients present late in pregnancy or only attend ANC once, key PMTCT messages will need to be provided during the post-test counselling session. During post-test counselling,

HCWs need to strongly encourage all clients who test positive to come back for ANC visits. Future visits will provide the opportunity to reinforce key PMTCT messages, provide follow-up counselling, and make referrals for HIV treatment, care and support as necessary.

See the detailed steps for providing post-test counselling for women who test HIV-positive in Appendix 4-C.

Steps involved in post-test counselling for women testing HIV-positive

- Discuss the meaning of the test result.
- Determine whether the client understands the meaning of the result.
- Provide an opportunity for the client to talk about her feelings.
- Talk about immediate concerns.
- Inform about essential PMTCT issues.
- Discuss ARV prophylaxis and infant-feeding issues.
- Discuss disclosure and partner testing.
- Encourage client to attend subsequent ANC visits and stress the importance of delivering in a PMTCT facility.

Exercise 4.5 Post-test counselling: Small group role-play

Purpose	To demonstrate and practise post-test counselling through role-playing
Duration	60 minutes
Instructions	<ul style="list-style-type: none"> ▪ The trainer and co-trainer will demonstrate a post-test counselling scenario and participants will observe. ▪ In groups of three, participants will use the counselling checklists (Appendix 4-C) and role-play scenarios for post-test counselling (Appendix 4-D) to practise role-plays. ▪ Each group will pick a scenario from Appendix 4-D to practise. The participants will each assume one of the roles of “client,” counsellor,” or “observer.” ▪ When the role-play is finished, the pair should spend a few minutes reviewing the experience with the rest of their team, asking such questions as “Was anything important left out of the session?” ▪ If the “counsellor” has difficulty figuring out what to say or how to answer the client, the observer may help by tapping the “counsellor” on the shoulder and assuming the service provider’s place. ▪ Once the session is finished, exchange roles repeat the process using another scenario in Appendix 4-D. Continue switching roles and practicing scenarios until each member has had a chance to practise providing post-test counselling ▪ The group will reconvene for discussion of the following questions: <ol style="list-style-type: none"> 1. How did you feel in your role as a counsellor? 2. What was the hardest part of counselling? 3. How did you feel as the client? Were your needs met? 4. How can basic communication skills be used during counselling sessions? 5. What positive reactions did you experience in the session?

Counselling and testing for women of unknown HIV status at the time of labour and delivery

In some settings, women who have not been tested during ANC or did not attend ANC may present to the health service at the time of labour with unknown HIV status. The current practice nationally is to counsel women of unknown HIV status in the labour ward.

Although it may be difficult to offer counselling or obtain informed consent during labour, the provider-initiated approach to testing should be offered during labour, and post-test counselling should be provided after delivery. A discussion about antiretroviral prophylaxis in these situations is provided in *Module 5: Specific Interventions to Prevent MTCT*. Depending upon the progress of labour, it may be possible to provide ARV prophylaxis to the mother and the infant or it may only be possible to provide ARV prophylaxis to the infant.

When a woman presents in late labour (active phase), defer counselling and testing until after delivery. After delivery, provide information about PMTCT, offer counselling, and perform the test unless the client refuses. If the results are HIV-positive, offer antiretroviral prophylaxis for the infant.

Follow-up, supportive counselling for women testing HIV-positive

After initial visits, follow up counselling sessions may be provided to the HIV-positive woman directly by the PMTCT service or by referral, such as at a family planning clinic, ARV clinic or in a social support centre.

One or more additional post-test counselling sessions can be given to allow the sharing of information that was not given during the pre-test session. Emphasis should be on:

- Options of PMTCT
- Prevention of HIV transmission to sexual partners
- Involvement of sexual partners/husbands and family members
- Enhancing coping and identifying available support systems and resources
- Infant-feeding options
- Safer sex practices
- Making decisions about future pregnancies
- Diet and nutrition in HIV-positive mothers and infants

Postpartum counselling for the HIV-infected woman

The HCW should do the following when counselling an HIV-positive mother after delivery:

- Assess general health and well-being.
- Discuss issues of PMTCT risk reduction and infant-feeding options.
- Assess and encourage adherence to ARV treatment for the mother and ARV prophylaxis for the infant.
- Discuss availability of HIV care and treatment for mother and infant.
- Discuss the importance of safer sex and family planning.
- Discuss importance of regular medical check-ups and continuous monitoring.
- Remind the client about HIV test of the child at 18 months.
- Discuss issues surrounding the possibility of HIV infection in the baby.
- Discuss disclosure of HIV serostatus to the spouse if not already done.
- Discuss family planning to prevent unwanted pregnancies.

Partner involvement and couple counselling

Responsibilities of the HCW when working with couples

HCWs can encourage clients to try to get their partners to participate in ANC services and get tested for HIV, regardless of the client's test result. Skill-building, problem-solving and practising what the client will say to her partner may help a client "disclose" (tell) her results to her partner and suggest the partner be tested. Information about agency hours, location and services may be given. If either the client or her partner gets a positive HIV test result, refer the couple for treatment, care and social support.

Advantages of couples counselling

Counselling male partners of pregnant women provides a chance to encourage men to practise safer sex by using condoms as well as limiting their number of partners. During counselling, HCWs can support the importance of the partner's presence and stress the man's responsibility for protecting the health of his wife or partner and their family.

Testing both partners together may reduce the chances that the woman will be "blamed" for bringing HIV infection into the family. Identifying "discordant" couples during counselling (where one partner is HIV-negative and the other is HIV-positive) gives an opportunity to discuss safer sex behaviour. Couples will also be better prepared to handle decisions about infant feeding if they are counselled together and supported as partners. To encourage men to come to the clinic for couple counselling and testing, an ANC clinic or testing site can offer evening hours that are more convenient.

Guidelines for counselling a couple for both pre-test and post-test sessions

- Create a trusting relationship with the couple.
- Let the couple know that there will be equal opportunity for both partners to speak.
- Let them know that both their opinions are important and that both have important roles and responsibilities.
- Assess each person's understanding of HIV/AIDS.
- Make sure they are aware that they are expected to disclose their results to each other.
- Assure them of confidentiality.
- If possible, conduct part of the pre-test separately to give each partner the opportunity to assess his or her risk behaviour alone with the counsellor.
- Explain the testing process.
- Discuss post-test counselling:
 - Ask whether the couple would prefer to receive the results separately or together. Most experts recommend receiving results together as a pre-condition for couple counselling.
 - Mention the possibility of discordant results (one partner is infected, whilst the other is not), and prepare them for this possibility.
 - Provide information on available PMTCT interventions: ARV prophylaxis, infant feeding practices.
 - Confirm the benefits of knowing one's HIV status; discuss concerns or the possible risk of such knowledge.
 - Ask who else might be affected by the test results.
 - Confirm the couple's willingness to be tested.
 - Be prepared to refer the couple for further counselling if indicated.
 - Be prepared to refer the couple for care and treatment, when appropriate.
- If the couple so chooses, give the test results to each separately first, then facilitate the couple to share the results with each other.
- After disclosure of results, continue with post-test counselling with both partners together.
- The counsellor should assist individuals who are reluctant to disclose their results.

"Discordance" in couples

Discordance means that one partner is HIV-positive and the other partner is HIV-negative. This situation can occur for many reasons. A client often believes that her test results reflect

her partner's status but this is not always the case. There are many factors involved in the transmission of the HIV virus, which brings up one of the crucial reasons for confidentiality. Also, HCWs need to be especially careful when counselling the client if she is pregnant and HIV-negative, and any potential sex partners are positive. If a mother-to-be is infected during her pregnancy, the chances of MTCT are much higher because there is an especially high amount of HIV virus in the body with a new infection.

The possibility of discordant status should be discussed during couple pre-test counselling, so that the couple is prepared for this possibility before receiving the results. The role of the counsellor will be to help the couple cope with the results and plan to reduce the risk of transmission to the negative partner. Assure the couple that condoms are successful in reducing the risk of transmission of HIV infection in discordant couples.

Discussion on possible reasons for discordant results should emphasize:

- The fact that HIV is not transmitted through every sexual act, though it is still possible for transmission to occur the first time a couple has sexual intercourse
- Frequency of sexual intercourse and unprotected anal sex carry more risk of HIV transmission compared to vaginal sex with or without a condom
- Viral load of the infected partner
- Window period
- STIs
- Circumcision

Counselling in special situations in PMTCT

Family counselling

Family counselling can be helpful in enabling families to provide support to a client after HIV testing, particularly in relation to infant feeding and when others are involved in the care of the infant.

Counsellors should correct any myths and misconceptions prevailing among the family members to avoid stigma and discrimination. The risk of coming into contact with blood of the person living with HIV/AIDS and the precautions to be taken should also be explained.

Treatment counselling

This is the counselling of clients in relation to ARV therapy. Treatment counselling is vital in PMTCT settings because the use of antiretroviral therapy and other prophylaxis regimens requires that counsellors explain the importance of medications and possible side effects so that clients make informed decisions.

The focus in treatment counselling should include:

- How to use the drug
- Possible adverse effects and drug interactions
- Adherence to treatment

Loss and bereavement counselling

Counselling in loss and bereavement offers emotional **and** practical support to a bereaved person. In PMTCT this **might typically occur** during:

- intrauterine fetal deaths
- stillbirth
- death of a child
- death of a spouse

In any of these events, a counsellor should help the client share their feelings, worries and fears about the loss and should help the client to identify strategies for dealing with the loss.

UNIT 5 HIV Testing

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe HIV testing processes.
- Describe steps taken in national testing algorithm
- Perform a rapid HIV test correctly.
- Explain the meaning of positive (reactive) and negative (non-reactive) HIV test results.
- Describe steps taken to assure quality in testing.

HIV Testing for PMTCT

One of the roles of ANC clinics in offering PMTCT services is to determine the HIV status of expectant mothers, so that appropriate measures such as provision of post-test counselling and provision of ARV prophylaxis for HIV-positive pregnant women can be instituted. This role therefore requires that PMTCT service providers working at ANC facilities have the knowledge and skills to correctly perform HIV tests.

Tests used for diagnosing HIV infection

There are two types of tests:

- Antibody-detecting tests
- Antigen and viral tests

Antibody Detecting Tests

The response of the body following HIV infection is the formation of antibodies against HIV. An “antibody” is a protein formed by the body’s immune system in response to a foreign invader, like HIV, that infects the body. It typically takes between 3 weeks to 6 weeks after infection, but occasionally up to 3 months, for these antibodies to become detectable in the blood.

Antibody tests are designed to find the antibodies or proteins the body’s immune system makes in response to HIV infection. They do not detect the virus directly. Examples of HIV tests under this category include ELISA, Western Blot and rapid HIV tests.

Rapid HIV tests

In Tanzanian PMTCT settings, the diagnosis of HIV infection is established by detecting HIV antibodies using simple and rapid tests as per national HIV rapid test standards and policies. These tests have the following common characteristics:

- Are highly accurate when performed correctly
- Do not require highly trained staff
- Do not involve many steps, hence easy to perform
- Do not require electricity when performing the test
- Are quick; results can be obtained within 30 minutes of testing

Benefits of rapid HIV testing include:

- Blood specimens can be analyzed in the clinic.
- HCWs do not need to track down test results from an outside laboratory.
- There is less of a risk of specimen mix-up or misplacement.
- Same-day results are more convenient for the client.
- HCWs can avoid missed opportunities for follow-up care for clients who would otherwise not return for results.

- Pregnant women who are HIV-positive can be educated immediately about PMTCT interventions and possible treatment options.

ELISA

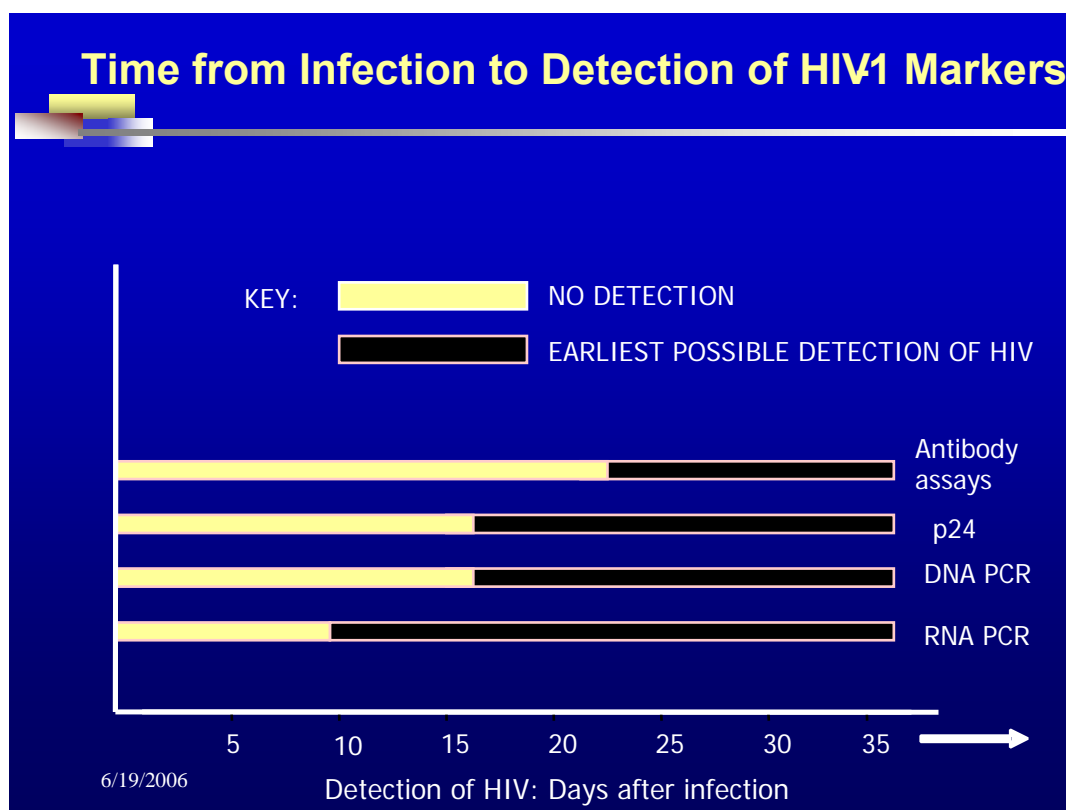
The ELISA is commonly used in laboratories for diagnosis and confirmation of discordant HIV test results done by simple rapid methods described above. It is highly sensitive, very specific and therefore reliable, especially when performed correctly.

Although the cost of using the ELISA is slightly cheaper than performing rapid tests, ELISA is technically demanding, requiring sophisticated equipment that needs strict maintenance. The ELISA requires electricity, highly-skilled laboratory personnel, involves many steps, and results take several days. Furthermore, ELISA is only cost-effective when testing large numbers of specimens at a time (40 - 90 specimens).

Antigen and Viral Tests

An “antigen” is a particle that is attached to a virus that serves as a marker so it can be identified by the body’s immune system and destroyed. Virologic and antigen tests, or assays, directly detect the presence of HIV in the blood. Examples include the P24 antigen test, which detects the presence of HIV core protein P24, DNA PCR and RNA PCR. Tests under this category are appropriate for early diagnosis of HIV infection in infants and young children less than 18 months old.

Figure 4.1



Selected HIV rapid tests for PMTCT

Based on their performance and other characteristics, the Tanzanian PMTCT programme is presently using the *SD Bioline™*, *Determine®* and *Uni-gold™* rapid tests. These tests have been evaluated and found to be suitable for use in Tanzania’s PMTCT settings

Please see Appendices 4-F and 4-G on how to use some of these rapid tests.

Serial and Parallel Testing Protocols

There are two different protocols that can be followed when conducting the HIV test: serial testing and parallel testing.

Serial testing

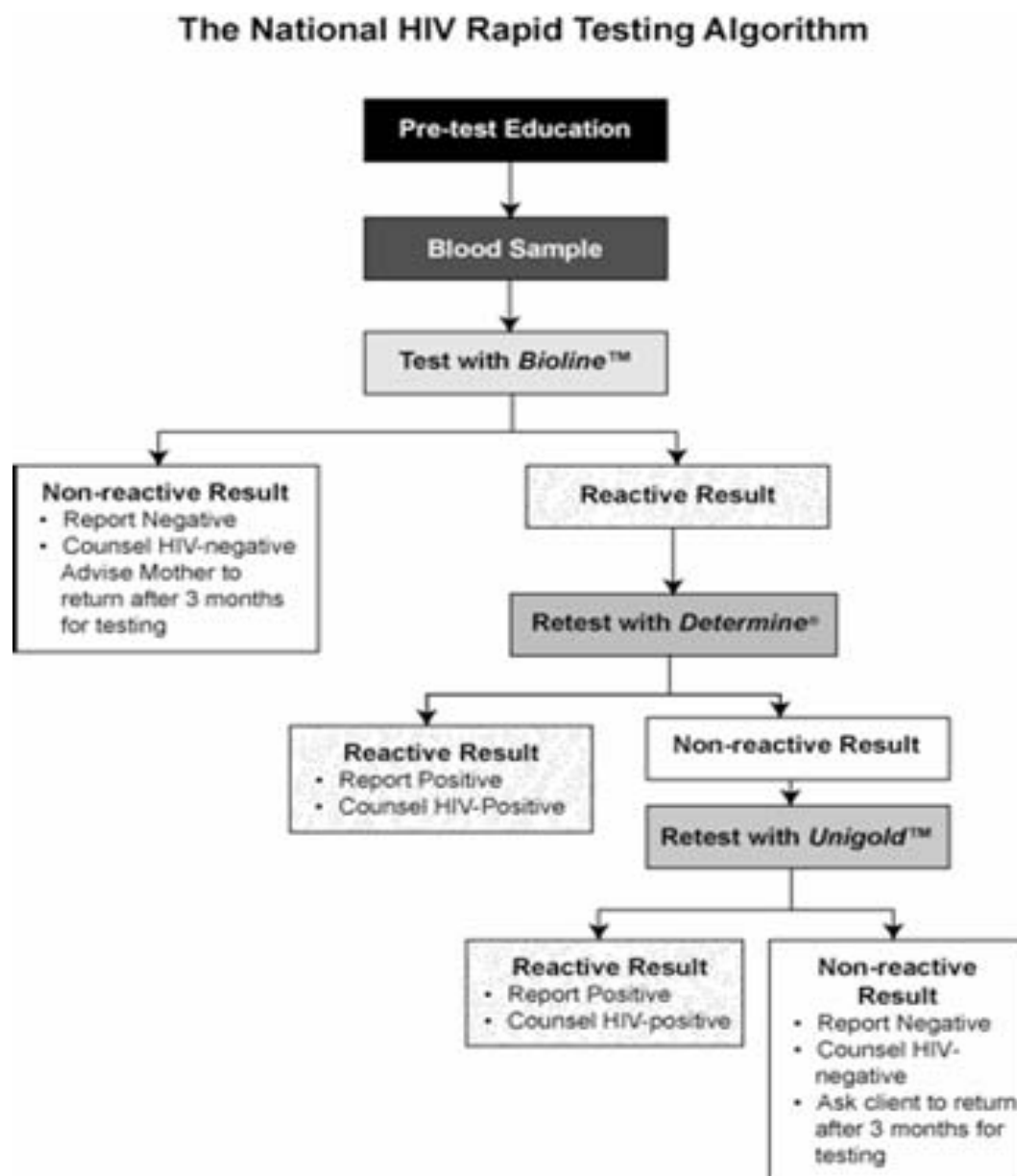
In serial testing, if the initial HIV rapid test gives a negative result, then the client is counselled as uninfected. However, an initial positive (or “reactive”) rapid HIV test result must be confirmed by a different rapid HIV on the same blood sample. The first test is usually very “sensitive”—it has a low chance of giving a false-negative result. The second test is very specific; it has a very low chance of giving a false positive result.

If the results of those two tests differ, a third round of “tie-breaker” testing is necessary. This third round is done using a different test on the same sample. The results of this test are definitive. The final HIV result is based on the result of this third test. If the third test is reactive, then the final HIV result is positive. If the 3rd test is non-reactive then the final HIV result is negative. Figure 4.2 summarizes the HIV rapid testing protocol, which uses serial testing.

The National MOHSW recommends serial testing for use in PMTCT settings because it is less costly and time-consuming than parallel testing. In serial testing, only one test is performed initially, and a second test is performed only if the first result is positive.

Parallel testing

In parallel testing, the healthcare worker conducts two initial rapid tests on the sample at the same time (in parallel). If both samples test positive, the result is positive and the client is counselled as such. If both samples test negative, the result is considered negative and the client is counselled accordingly. If one sample is positive and the other is negative, a third (tie-breaker) test is performed, and the result is considered definitive.

Figure 4.2: HIV Diagnosis Serial Testing Algorithm for Women in Antenatal Care**Interpreting HIV antibody tests**

The result of an HIV test can be positive or negative.

A positive HIV test (one that has been confirmed by more than one reactive test) means that antibodies to HIV are present in a person's body and that the person is infected with the virus. HCWs must remember that a positive HIV test does not mean that the person has AIDS; it only confirms infection with the HIV virus.

Most people with HIV infection are healthy for most of the time they are infected. AIDS is the later stage of HIV infection when a person becomes sick.

A negative test results can mean one of two things:

- Either the person is not infected with HIV,

Or

- The person is infected with the virus but the body has not had enough time to make a detectable amount of antibodies.

A negative test does not mean that person will never become infected with HIV. There is no such thing as immunity to HIV infection.

Clients who test HIV negative on their first test, but may be in the window period (the 3 month period after becoming HIV infected), should be told to come back for repeat testing. These clients should be re-tested 3 months after they were exposed or possibly exposed to HIV. Pregnant women who are tested early in pregnancy, and test negative should be re-tested later in pregnancy to confirm negative results.

Additional information on diagnostic testing of HIV-exposed infants and young children will be covered in *Module 7: Comprehensive Care and Support for Mothers and Families with HIV Infection*.

The Five Basic Steps to HIV Testing:

1. A specimen is obtained. Most often, blood is taken from a person's fingertip or arm. Specimens must be handled with care. Those administering the test should wear gloves.
2. The specimen is processed. This can be done on-site, at an ANC clinic, in the labour ward or in a laboratory.
3. A HCW or laboratory technician trained in HIV testing procedures conducts the test.
4. The client is told their result.
 - When a test is first conducted, either it reacts to the chemical agents in the test kit or it does not react. A “reactive” test means that the person might be HIV-positive, and needs to be confirmed with another test (see Figure 4.1). In an adult, a confirmed reactive test is considered a “positive” result.
 - In an adult, a positive and confirmed HIV antibody test result means that the person is infected with HIV.
 - If the test result is negative, it is considered “non-reactive.” A non-reactive test does not need to be confirmed.
 - A negative (non-reactive) result usually means that the person is not infected with HIV. However, in rare instances, a person with a negative result may be in the “window period.” This is the period of time between the onset of infection and the appearance of detectable antibodies in a specimen. Most people will develop detectable antibodies within three months of infection; on average, a person will develop antibodies within four to six weeks of infection. In rare cases, this process can take up to six months. This is why it is important to advise women who tested negative early in pregnancy, to return after three months for re-testing in order to confirm negative results.
5. The HCW provides post-test counselling, support and appropriate referrals.

Testing procedure for HIV infection

In order to test a person for HIV infection, a HCW must handle the testing devices properly. The following are important points to be observed:

- Infection control and standard precautions
- Proper labelling
- Proper specimen collection procedures
- Using the required volume per test
- Use of proper buffer solution per test
- Correct timing per test
- Interpretation of results
- Proper record-keeping
- Proper disposal procedures

The client should be as comfortable as possible during the test. The healthcare worker performing the test should reassure the client that certain factors may affect the test results. Some of the factors affecting test performance are:

- Storage and handling of test kits
- Changes in the environment
- Accuracy of equipment; external and internal controls
- Shelf-life of the chemicals for the tests (reagents)
- Technique for sample collection
- Quality of sample
- Use of equipment

The client should be reassured that all efforts have been made to ensure the accuracy of the test result. This is part of basic quality assurance.

Exercise 4.6 Rapid HIV test demonstration and practice	
Purpose	To review the steps involved in rapid HIV testing, develop the skills for obtaining the sample and interpretation of test results
Duration	50 minutes for demonstration, 50 minutes for participant practice (practice component is optional)
Instructions	<ul style="list-style-type: none"> ▪ The trainer will select one test to demonstrate the steps involved in collecting and processing a specimen. One participant will be asked to volunteer to play the role of “client.” The trainer will assume the role of HCW collecting the blood sample for testing. All other participants observe the interaction between participant volunteer and healthcare worker. ▪ The participants may be divided into several small groups to practise the testing process. ▪ Each group will divide into pairs of healthcare workers and clients.

Quality Assurance

Assuring quality in HIV testing

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 and dependable. As a rule, a counsellor should not issue results if quality control measures have not been taken.

Quality assurance

Quality assurance is defined as the planned and systematic activities put in place to provide adequate confidence that requirements for quality are met. Establishing standard procedures for specimen collection, defining criteria for acceptable specimens or specimen rejection, and client exit interviews are a few examples of quality assurance activities.

Quality control

Quality Control are the measures taken to monitor the quality of the test itself. Quality control ensures that the tests are functioning properly and that the person performing the tests can report accurate results with confidence.

There are 2 levels of quality control for HIV Rapid testing:

- Testing of samples with known results to verify that the procedure is working properly
- Interpreting the presence or absence of control bands/lines within the device itself

If problems or errors occur, immediate corrective action must be taken before the results are given to clients. Quality control is therefore part of quality assurance.

Quality Assurance Measures at testing sites

- Testing should be done according to the manufacturer's instructions as detailed in the text protocol included in the kit.
- Test kit content should not be used beyond expiry date.
- Recording of the results should be done immediately after testing.
- Laboratory technicians at the health facility offering PMTCT services have supervisory roles in all matters relating to HIV testing at ANCs. They should monitor performance of HIV testing and conduct the whole exercise of quality assurance locally as per National HIV Quality Assurance Guidelines, e.g., picking every 10th and all indeterminate specimens for retesting 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 during the supervision process
- If poor performance is reported, remedial measures including retraining and/or change of staff shall be recommended by persons in charge of the laboratory.

General procedure for HIV testing

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

- Follow infection prevention procedures and Standard Precautions.
- Properly collect specimens using quality phlebotomy technique.
- Label the specimens carefully and accurately.
- Conduct the test according to manufacturer's instructions.
- Avoid contamination of test reagents.
- Maintain 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 and PMTCT 2 for Non-reactive).

Module 4: Key Points

- Basic communication skills promote mutual understanding and trust in the counsellor/client relationship.
- Pre-test information, HIV testing and post-test counselling should be available to all pregnant women on a routine or provider-initiated basis.
- The HCW and the facility must maintain confidentiality of HIV status.
- Partner testing and couple counselling are encouraged.
- Rapid HIV tests with same day results should be used for most ANC settings. When done properly, these tests are highly accurate.
- Serial testing is the process by which a positive (reactive) antibody test is confirmed by repeat testing using a different test. Initial negative test results do not require confirmation. Serial testing is used nationally.
- Post-test counselling is important for all women:
 - For women who are HIV-negative, emphasize the prevention of HIV infection.
 - For women infected with HIV, provide information about PMTCT and referrals to HIV care, treatment and social services, where available.
- Disclosure (telling one's partner or family about one's HIV status) skills-building should be encouraged for all women no matter what their HIV status.
- Quality assurance activities for counselling and testing are essential to ensure the provision of quality counselling and accurate and reliable HIV testing.

APPENDIX 4-A Counselling Skills and Technique Checklist

As you observe your colleagues role-play, indicate the counselling skills and techniques they use by placing a check in the appropriate box.		
SKILLS AND TECHNIQUES CHECKLIST		
Skills & Techniques	Specific Strategies, Statements, Behaviours	(√)
Establishing a relationship	▪ Greets the client; shakes their hand if appropriate	
	▪ Leans forward when talking	
	▪ Makes eye contact	
	▪ Shows interest in the client	
	▪ Other (Specify):	
Paraphrasing	▪ Restates what the client has said using different words.	
	▪ Paraphrases in a manner that indicate the client/s have been understood.	
	▪ Other (Specify)	
Reflecting Feelings	▪ Reflects emotional responses back to the client using different words.	
	▪ Other (Specify)	
Questioning	▪ Asked questions that identify, clarify, and break problems down into more manageable components.	
	▪ Uses open-ended questions to get more in-depth information from the client.	
	▪ Style of questioning reflects interest, care, and concern rather than interrogation.	
	▪ Other (Specify)	
Clarifying	▪ Checks understanding of what the client is saying.	
	▪ Uses phrases such as: “Are you saying that...?” Correct me if I am wrong...”	
	▪ Other (Specify):	
Summarizing	▪ Takes time to summarize information the client shares.	
	▪ Check with client to be sure they understand the important concerns and issues.	
	▪ Other (Specify):	

APPENDIX 4-B Providing pre-test information

Sample Pre-test Group Information Script

HIV is in the community and it can affect anyone.

- Welcome, my name is _____. I am a _____ (title) here at the clinic.
- Today as part of your visit, we will be discussing HIV, HIV testing and ways you can protect your health, the health of your baby and your family.
- HIV affects families and our community. HIV is an infection that can lead to a serious illness called AIDS. Of women aged 15-49, about 840,000 nationally are infected with HIV.
- You cannot tell who has HIV. Most people who have HIV do not feel or look sick.
- Everyone should learn if he or she has HIV, **especially pregnant women, because if a pregnant woman has HIV, she can pass it to her baby.**
- The only way to know if you have HIV is to be tested. If you are tested and do not have HIV, you will learn how to protect yourself and your baby from getting HIV. If you are tested and have HIV, you will learn how to lower the chance of passing HIV to your baby and how to get care and treatment for yourself, your baby and your family so you can live healthy lives.

How one can get or pass HIV

- One of the main ways you can get HIV is by having unprotected sex (sex without a condom). All pregnant women who have had unprotected sex are at risk for HIV.
- You can also get HIV when receiving a blood transfusion, if the blood has not been tested for HIV.
- You can also get or pass HIV by sharing sharp objects such as razor blades or piercing equipment that puncture or cut the skin. It can also be transmitted by sharing needles and syringes to inject drugs or any other substance.
- HIV cannot be passed in the following ways:
 - Mosquito bites
 - Sharing food and utensils
 - Hugging and holding
 - Shaking hands
 - Using toilets

How HIV is passed on to the baby

- A mother with HIV can pass HIV to her baby during pregnancy, labour and delivery, and breastfeeding.

Why should women test for HIV

- Not all women who have HIV will pass it to their babies. Without care, 1 out of 3 women with HIV will pass HIV to her baby. This is why it is important to be tested for HIV and receive medical care: to lower the chance of passing HIV to your baby.
- There are many benefits to testing.
- If you are tested and you do not have HIV, you will learn how to protect yourself and your baby from getting HIV.
- Most women who are tested will not have HIV.
- **If you are tested and you have HIV, you will learn how to lower the chance of passing it to your baby and how to get treatment and care services so you and your baby can both live healthy lives.**

APPENDIX 4-B Providing pre-test information *(continued)*

How will the HIV test be done?

- HIV testing will be offered as part of the basic services you will receive today.
- HIV testing is private. This means that only HCWs who are caring for you will know your HIV test result.
- You have the right to refuse HIV testing, but we strongly recommend you be tested for HIV to help protect your baby. Unless you refuse, we will test you for HIV along with the other tests we do today.
- The HIV test will be done by a simple fingerprick.
- If your HIV test result is negative, it means you do not have HIV. If your HIV test result is positive, it means you have HIV.

The importance of partner testing

- Regardless of your HIV test result, it is very important for your partner to get tested for HIV. In couples, it is common for one person to have HIV (i.e., HIV-positive) while the other person does not have HIV (i.e., HIV-negative).
- When couples have different test results, the HIV-negative partner is at high risk of getting HIV. Sometimes couples have been together for years, have been faithful, have had children, and still have different HIV test results. If an HIV-negative partner continues to have unprotected sex with a partner who is HIV-positive, then he or she is very likely to get HIV.
- The only way to know your partner's status is for him to be tested for HIV. Your partner should be tested so you can protect each other and your baby from HIV.
- Another important reason why your partner should be tested is because if you are HIV-negative now and get HIV later in your pregnancy, or while you are breastfeeding, the risk of passing the virus to your baby is very high.

How a woman can protect herself from HIV?

- There are three main ways to protect yourself and your partner from HIV.
- If you and your partner are both tested for HIV and are both HIV-negative, you can protect each other from HIV by being faithful and only having sex with one another. If either of you has sex with anyone else, you could become infected with HIV and pass it to your partner.
- Another way to protect yourself is by using condoms. When used correctly every time you have sex, condoms help protect against HIV. It is particularly important to use condoms if your partner is HIV-positive, if you do not know if your partner has HIV or if your partner has other partners.
- We can provide you with condoms and information on how to use a condom correctly. You and your partner can also get additional information about condoms at _____ *(name of site)*.
- Another option is not to have sex, particularly until your partner is tested for HIV. This can be difficult, but it is the most effective way to protect each other from HIV.

How a HIV-infected woman can protect her baby?

- If you are HIV-positive, there are medicines that we will give you and your baby to lower the chance of passing HIV to your baby.
- Your healthcare provider will decide with you when you need to take medicines for HIV (antiretrovirals), which can help protect you from becoming ill and can help you have a long, healthy life.
- We will also discuss ways to feed your baby so you can choose which one will work for you and lower the chance of passing HIV to the baby.
- We will give you more information after the test to help you make these choices.

APPENDIX 4-B Providing pre-test information *(continued)*

If I have HIV, what help can I get?

- More and more services are becoming available to help HIV-positive people and their families stay healthy.
- If you are HIV-positive, there are medicines available to help you live a long and healthy life.
- Additional counselling, prevention, nutrition and support services are also available.
- After the test, we will give you more information about the services available to help you.

Why is it important to continue with my healthcare visits?

- No matter what your test result is, it is very important for you to continue receiving antenatal care.
- You should also plan to deliver your baby in a health facility, where there are skilled providers who can help in case of problems. This is especially important if you are HIV-positive because there are steps we can take at the health facility to help protect your baby from HIV: steps that might not be available if you have your baby outside of a health facility.

Summary

- We have talked about five main points today:
 1. It is important that you test for HIV.
 2. If you are HIV-negative, you will learn how to stay negative.
 3. If you are HIV-positive, there are **medicines and** ways to feed your baby to lower the chance of passing HIV to your baby. You and your family can also receive care, treatment and support services to stay healthy.
 4. Whether your test result is positive or negative, your partner needs to be tested for HIV since your result could be different from his.
 5. You should continue with your **care during pregnancy and plan to deliver in a health facility.**
- Remember, by taking the HIV test, you can protect your baby and family from HIV and you can stay healthy.
- If you have specific questions or concerns, we can discuss them privately.

Source: CDC, WHO, UNICEF, USAID. Testing and Counselling for Prevention of Mother-to-Child Transmission of HIV: Support Tools. December 2005.

APPENDIX 4-B Providing pre-test information *(continued)*

Answers to Frequently Asked Questions in Individual Pre-test Counselling

What is the difference between HIV and AIDS?

HIV is the virus that causes AIDS. Someone can be infected with HIV and not know it. An infected person might not feel ill for many years. AIDS develops when an HIV-infected person's defence system is severely weakened.

There is no cure for HIV and AIDS, but medications are available that can help prevent related infections and slow the progression of HIV. Such treatment helps people who are HIV-positive stay healthy for many years.

What is happening in our country? How many people are HIV-infected? How many are men, how many are women or children?

- Of the 1.6 million people living with HIV/AIDS, 70.5% are 25-49 years old, and 15% are 15-24 years old.
- 60% of new infections occur among youth aged 15-24 years.
- The hardest-hit age group is 25-29 year olds who, as a result, will be unable to contribute to national development.
- Results of seroprevalence studies reveal considerably higher infection levels in urban residents (10.9%) than rural residents (5.3%).
- HIV prevalence in women is 7.7% as compared to 6.3% in males.
- At the end of 2003, the estimated number of AIDS orphans under the age of 17 having lost a parent was 980,000.

What are some common myths (*imani/mtazamo wajamii kuhusiana na talizo la hadithi*) about HIV?

Share commonly held beliefs and myths about HIV and AIDS. How can mistaken beliefs interfere with preventive behaviour (safer sex) or care and treatment? How can mistaken beliefs actually put people at greater risk for transmission? How can facts about HIV/AIDS be presented in ways that don't attack people for their beliefs?

How can you get HIV?

The most common way to get HIV is by having unprotected sex with a person who is HIV-positive. A mother who is HIV-positive can transmit HIV to her baby. Mother-to-child HIV transmission can take place during pregnancy, labour and delivery, or breastfeeding.

HIV infection can also be transmitted if someone uses a knife, scalpel, needle, or any other sharp object that has been used previously on a person with HIV, to cut or pierce the body. This includes medical, ceremonial or religious procedures in the community or healthcare or any other setting. Similarly, HIV can be transmitted if one uses a needle/syringe, or any other equipment for injecting, that was used on an HIV-positive person, to inject drugs or any other substance (vaccines, vitamins).

HIV can be transmitted to a person who receives blood that has not been screened for HIV.

What are some ways to prevent HIV infection?

- Sexual abstinence—not having sex
- Practising faithfulness between two uninfected partners
- Limiting sexual contact to one partner who is HIV-negative
- Avoiding drug abuse
- Not sharing contaminated needles

APPENDIX 4-B Providing pre-test information *(continued)*

What kinds of things may put you at risk for HIV?

- Having unprotected sex with a person with HIV infection; unprotected vaginal sex is risky, unprotected anal sex is even riskier
- Having multiple sex partners, which increases the risk that one of them will be HIV-infected
- Having sex with anyone who has more than one partner (even if you are monogamous)
- Abusing drugs or alcohol; sharing contaminated needles
- Not knowing whether your partner is HIV-negative or positive
- Having a sexually transmitted infection (e.g., gonorrhoea or syphilis), which can increase the risk of getting HIV by 2–5 times

What are ways to decrease the risk of getting HIV?

- Be in a mutually monogamous relationship with someone who has tested HIV-negative.
- If you are not in a mutually monogamous relationship or if either of you has not yet tested for HIV, use condoms consistently and correctly.
- Talk to your partner about HIV testing.
- Talk about HIV concerns with a partner or friend.
- Reduce alcohol and/or drug use.
- Avoid places where you are more likely to participate in high-risk behaviours.
- Abstain from sex or use condoms until you and your partner have been tested.

Emphasize the importance of making small, reasonable changes rather than setting unrealistic goals, such as never having sex again. Ask clients to share their plans with a close friend or someone they trust.

How do babies get HIV from their mothers who are HIV-infected?

- If a woman is HIV-infected and pregnant, there are three ways her baby can get HIV: during the pregnancy, during labour and delivery, or during breastfeeding.
- Although the risk of infecting the baby is always present, about 60% of women who are infected with HIV give birth to babies who are HIV-negative.
- The good news is that there are medicines that can greatly reduce the risk of a mother transmitting HIV to the baby during delivery. These medicines offer new hope to families.

What is the Prevention of Mother-to-Child Transmission of HIV, or PMTCT programme?

This programme helps reduce the chance that babies born to women who are infected with HIV will also be infected. The programme has four parts:

- HIV counselling and testing to identify women with HIV and educate them on how to reduce the likelihood that HIV will be transmitted to their babies
- Antiretroviral medicine to reduce the baby's risk of getting HIV from its mother
- Counselling and support for safer infant-feeding practices
- Referral to treatment, care, and support programmes

APPENDIX 4-B Providing pre-test information *(continued)*

How is HIV testing conducted?

- Testing is offered to all pregnant women attending ANC nationally. Everyone has the right to refuse HIV testing.
- The test tells if a woman is infected with HIV or not. On very rare occasions, if a woman has been infected recently, the test results may indicate that she is negative even though she is HIV-infected. Women who tested negative early in pregnancy should be re-tested later in their pregnancy to confirm negative results.
- A positive HIV test means a woman has the HIV virus in her blood. It does not mean she has AIDS; it does not tell her when she will get sick.

What are the advantages of knowing the test results?

- Knowing her HIV status can help a woman make informed decisions about her pregnancy.
- If she is HIV-infected, knowing her status can help her access HIV services for herself and prevent transmitting HIV infection to her baby.
- Knowing her HIV status allows her to reduce the risk of infecting other people.
- Early testing makes it easier to plan for the future.
- If a woman finds out she is HIV-negative, she can learn how to stay uninfected and keep her family safe from HIV infection.
- There are many preventive healthcare services that can improve a woman's quality of life and prolong her life.
- Increasingly, medications for the treatment of HIV infection are becoming available. These medications reduce the damage that HIV does to the body and prolong life.

What are the disadvantages of testing for HIV?

- A client might experience a little discomfort or bruising during the blood sampling process (a finger prick or blood taken from the arm).
- Programmes may not be readily available for help or treatment, but she can be referred.

Who can receive information about your test results?

Test results are confidential and become part of a client's medical records. They can only be shared with healthcare workers who are involved in care and treatment—and only on an “as-needed” basis. She or he has the right to decide if anyone other than HCWs may receive this information, and she or he is entitled to receive support during the disclosure process.

What types of services are available in your community for the person who is HIV-infected?

Discuss locally available referrals for PLWHA and their families, such as those that offer any of the following services:

- Nutritional support
- Couples counselling
- ARV treatment and prophylaxis to prevent transmission to the infant
- Medicines to prevent opportunistic infections
- Spiritual support, referral to a faith-based organisation
- Peer support groups
- Classes to learn safer infant-feeding practises
- Safe water programs

APPENDIX 4-C Post-test counselling checklists

HIV-negative result

Counselling is a relationship and 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 or her own test results.

- ✓ Greet the client.
- ✓ Ask whether the client has any questions before they read the results. 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 she or he remembers important information.
- ✓ Inform them that the HIV test result is ready for them to interpret. Ask the client what their 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) they were not infected with HIV.
- ✓ If there was a recent risk exposure, discuss the need to re-test.
- ✓ 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 of 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.
- ✓ Emphasize the importance of protecting herself from infection while pregnant or breastfeeding, and explain how doing that will lower the risk that her infant will become HIV-infected.
- ✓ 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 available as well as subsequent counselling sessions.
- ✓ Remind clients and their families that counselling or referral to counselling will be available throughout the pregnancy to help them plan for the future and to remain uninfected.

APPENDIX 4-C Post-test counselling checklists *(continued)*

HIV-positive result

Counselling is a relationship and 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 utilized. This offers an opportunity for clients who are tested to receive their results the same day. In many settings, client is taught to read his or her own test results.

- ✓ Greet the client.
- ✓ Ask whether the client has any questions before they read the results. 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 she or he remembers important information.
- ✓ Indicate that the HIV test result is ready for them to interpret. Ask them if they are 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 her feelings and emotions are common in this situation.
- ✓ 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 woman'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) [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 the pregnancy to help them plan for the future and obtain necessary services.

APPENDIX 4-D Role-play scenarios for post-test counselling

Scenarios for HIV-negative test results

Scenario 1

Lila is 17 years old and has been dating her boyfriend for one year. She started having unprotected sexual relations with him three months ago and is now pregnant. She suspects that her boyfriend may be at risk for HIV since he has not been faithful to her, although he denies this. During her first visit to ANC, she decided to be tested, just in case she is infected. Her result is negative. What points should be brought up in post-test counselling?

Scenario 2

Gertrude is a student in computer school and is in her third trimester. Although she is in a committed relationship with the father of her child, in the past she had multiple sexual partners and engaged in unprotected sex. After attending her first ANC visit, she understood that she might be at risk for HIV and she does not want to put her partner or baby at risk. She decides to be tested. Her result is negative. What should the counsellor focus on in post-test counselling?

Scenarios for HIV-positive test results

Scenario 1

Nasra is a commercial sex worker and sees many men each week. She has tried to get them to use condoms but many of them refuse. She is in her 28th week of pregnancy; this is her first visit to the ANC clinic. She is worried about her baby's safety and has agreed to be tested for HIV. Her result is positive. What aspects of her risk behaviours and the health of her baby should the post-test counselling stress?

Scenario 2

Hashima and Malik have been married for six years and have three children. She is now in her second trimester and suspects they may be having twins. Last year, the couple had separated for approximately four months. During that time, Malik had sexual relations with someone who, he later found out, was HIV-infected. Hashima is aware of this and, because of the pregnancy, knows that the baby is at risk for HIV infection if she has HIV. Malik has refused testing, but she was tested and he has accompanied her to the clinic today to hear her results. Hashima has tested positive. Stressing aspects of couple's counselling, what are the messages that should be emphasized for Hashima and Malik?

Scenario 3

Lela works in housekeeping at the ANC clinic. She is well-liked by all the staff and recently found out she is going to have her first baby. She knows, because of previous behaviours, that she needs to be tested for HIV. She approached one of the healthcare workers and asked for her help getting tested. She is very concerned that other staff may find out and wants test results kept confidential between her and this one healthcare worker.

APPENDIX 4-E Fingerprick Graphic



April 2004

Fingerprick Always use Standard Precautions.



World Health Organization



1. Collect supplies.



2. Position hand palm-side up. Choose whichever finger is least calloused.



3. Apply intermittent pressure to the finger to help the blood to flow.



4. Clean the fingertip with alcohol. Start in the middle and work outward to prevent contaminating the area. Allow the area to dry.



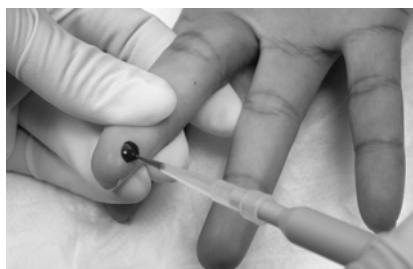
5. Hold the finger and firmly place a new sterile lancet off-center on the fingertip.



6. Firmly press the lancet to puncture the fingertip.



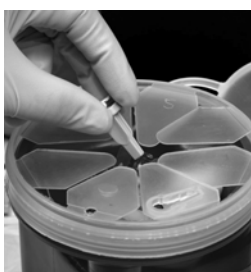
7. Wipe away the first drop of blood with a sterile gauze pad or cotton ball.



8. Collect the specimen. Blood may flow best if the finger is held lower than the elbow.



9. Apply a gauze pad or cotton ball to the puncture site until the bleeding stops.



10. Properly dispose of all contaminated supplies.

Source: WHO, HHS-CDC. *Providing Training and Supervision for HIV Rapid Testing*. Draft May 2005.

APPENDIX 4-F *Determine*[®] Fact Sheet



Determine[®] HIV Rapid Test (For use with whole blood, serum, or plasma) Store kit: 2 - 30° C



World Health
Organization

- Check kit before use. Use only items that have not expired or been damaged.
- Bring kit and previously stored specimens to room temperature prior to use.
- Always use universal safety precautions when handling specimens. Keep work areas clean and organized.

This outline is not intended to replace the product insert or your standard operating procedure (SOP).



1. Collect test items and other necessary lab supplies.



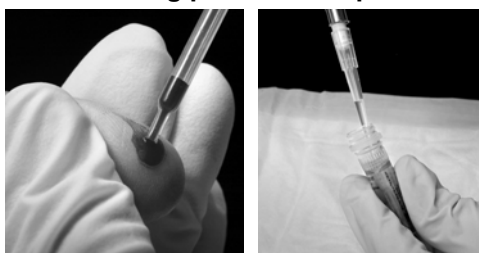
2. Use 1 strip per test and be sure to preserve the lot number on the remaining packet of strips.



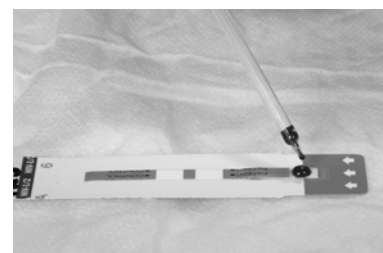
3. Label the test strip with client identification number.



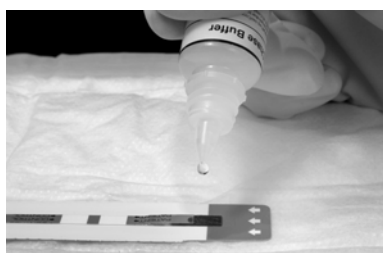
4. Pull off the protective foil cover.



5. Collect 50 µl of specimen using either a pasteur or precision pipette.



6. Apply the specimen to the absorbent pad on the strip.



7. For whole blood only add 1 drop of chase buffer to the specimen pad.



8. Wait 15 minutes (no longer than 60 minutes) before reading the results.



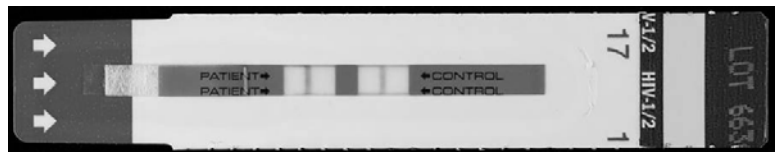
9. Read and record the results and other pertinent info on the worksheet.

APPENDIX 4-F *Determine*[®] Fact Sheet *(continued)*

Determine[®] HIV Rapid Test Results

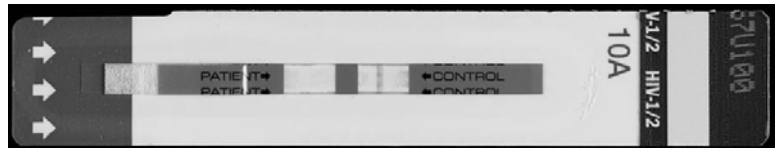
Positive

2 lines of any intensity appear in both the control and patient areas.



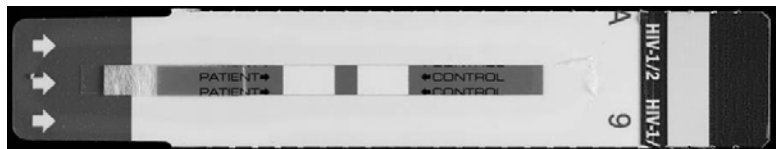
Negative

1 line appears in the control area and no line in the patient area.



Invalid

No line appears in the control area. Do not report invalid results. Repeat test with a new test device even if a line appears in the patient area.



Source: WHO, HHS-CDC. *Providing Training and Supervision for HIV Rapid Testing*. Draft May 2005.

APPENDIX 4-G *Uni-Gold™ Recombigen® HIV Rapid Test Fact Sheet*

Uni-Gold HIV Rapid Test For use with whole blood, serum, or plasma Store Kits: 2 - 30° C

- Check kit before use. Use only items that have not expired or been damaged.
- Bring kit and previously stored specimens to room temperature prior to use.
- Always use universal safety precautions when handling specimens. Keep work areas clean and organized.

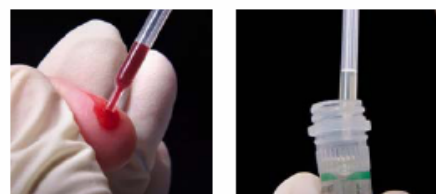
This outline is not intended to replace the product insert or your standard operating procedure (SOP).



1. Collect test items and other necessary lab supplies.



2. Remove device from package and label device with client identification number.



3. Collect specimen using the disposable pipette.



4. Add 2 drops (approx. 60µl) of specimen to the sample port in the device.



5. Add 2 drops (approx. 60µl) of the appropriate wash reagent to sample port.



6. Wait for 10 minutes (no longer than 20 min.) before reading the results.

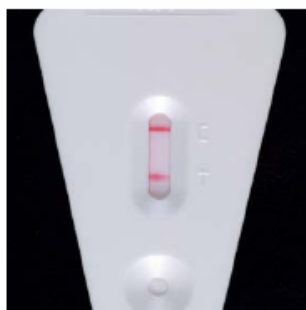


7. Read and record the results and other pertinent info on the worksheet.

Uni-Gold HIV Rapid Test Results

Reactive

2 lines of any intensity appear in both the control and test areas.



Non-reactive

1 line appears in the control area and no line in the test area.



Invalid

No line appears in the control area. Do not report invalid results. Repeat test with a new test device even if a line appears in the test area.



Use of trade names and commercial sources is for identification only and does not imply endorsement by WHO, the Public Health Service, or by the U.S. Department of Health and Human Services (2005).



Source: World Health Organization, U.S. Centers for Disease Control and Prevention. 2005. Available at: <http://www.phppo.cdc.gov/dls/ila/documents/Unigold.pdf>

Module 5 Specific Interventions to Prevent MTCT



Total Module Time: 300 minutes (5 hours)

MODULE OBJECTIVES

After completing the module, the participant will be able to:

- Identify essential elements of antenatal care for HIV-infected women and discuss the role of antenatal care in preventing mother-to-child transmission of HIV.
- Describe the use of antiretroviral therapy and prophylaxis in PMTCT.
- Explain interventions for reducing the risks of MTCT during labour and delivery.
- Explain the management of women with unknown HIV status in labour and delivery.
- Describe guidelines for immediate care of HIV-exposed infants.
- Describe the immediate postpartum care of women with HIV infection.

UNIT 1 Implementation of Comprehensive ANC Services

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Identify essential elements of antenatal care for HIV-infected women and understand the role of antenatal care in preventing mother-to-child transmission of HIV.

Antenatal Care (ANC) and Integrating PMTCT

Antenatal care improves the general health and well-being of pregnant women and their families. The ANC setting is an important source of healthcare for women of childbearing age. By integrating PMTCT services into essential ANC services, healthcare programmes can improve care—and pregnancy outcomes—for all their patients.

Because of the rapid spread of HIV infection worldwide, all pregnant women are considered at risk for HIV infection and should be offered HIV counselling and testing during ANC. This unit discusses the integration of PMTCT and HIV care into ANC services.

Antenatal interventions can reduce the risk of MTCT. Good ANC helps HIV-infected women stay healthy longer, prevent MTCT, and protect the health of their children. When mothers die prematurely, their children face higher rates of illness and death.

Successful implementation of PMTCT programmes requires the following ANC services:

- Health information and education
- Education about safer sex practices and HIV
- HIV counselling and testing for women and their partners
- Interventions to reduce the risk of MTCT
- Infant-feeding counselling
- Support for Safe Motherhood, including malaria and TB treatment
- Referral to HIV care and treatment clinics (CTC) for HIV-infected women and their families
- Diagnosis and treatment of sexually transmitted infections (STIs)

Antenatal care of women infected with HIV

ANC for women infected with HIV includes the same basic services as for all pregnant women. However, obstetric and medical care should be expanded to address the specific needs of women infected with HIV. (See Table 5.1) There is no need to increase the number of antenatal visits for HIV-infected women unless there are complications of HIV infection. Additional time for counselling is required on a range of subjects that will be discussed in this unit.

Determining a woman's HIV status is the first step in providing appropriate treatment, care, and support services, including antiretroviral therapy and prophylaxis. HIV testing is offered at the women's first ANC visit. Rapid HIV testing allows women to be tested and receive their HIV test results at the same visit. Partner HIV counselling and testing should be encouraged, supported, and recorded in the Provider-initiated Testing and Counselling (PITC) register.

When HIV status is positive, mothers should be offered referral to a care and treatment clinic (CTC) to be evaluated for ARV therapy eligibility. All HIV-infected partners should also be referred to CTCs for evaluation.

Where there is laboratory capacity within ANC, specimens should be sent for:

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

If there is no laboratory capacity, these tests should be performed at the CTC.

If a pregnant woman is not eligible for ARV therapy they require ARV prophylaxis which will be delivered through ANC.

In some situations, because of the lack of testing services or because a woman declines testing, her HIV status may remain unknown during pregnancy. In such circumstances, the woman should be considered at risk for MTCT, and she should be counselled accordingly during ANC. Women of unknown HIV status should be made aware that HIV testing will be available at later ANC visits and be reminded of the benefits of knowing their HIV status. ARV prophylaxis should not be considered for women of unknown HIV status.

Preventing and treating opportunistic and HIV-related infections

Preventing and treating opportunistic infections (OIs) can reduce illness and death among HIV-infected pregnant women. Preventing and treating OIs can also reduce the risk of poor pregnancy outcomes, such as preterm labour. Women infected with HIV are also more susceptible to common infections as well as OIs and should be treated according to national guidelines. HIV-infected women are more susceptible to infection because of their weakened immune systems. Both OIs and common infections can increase the risk of MTCT.

Examples of common infections in pregnant women include the following:

- Sexually transmitted infections (STIs)
- Urinary tract infections
- Respiratory infections
- Recurrent vaginal candidiasis
- Malaria

HIV-infected women in antenatal care should be monitored for signs or symptoms of OIs and other common infections in pregnancy. OIs usually indicate HIV disease progression and require a referral to a CTC for management. HCWs caring for HIV-infected women should follow guidelines for prophylaxis to prevent OIs. Module 7: *Comprehensive Care and Support for Mothers and Families with HIV Infection* provides more information about preventing opportunistic infections in HIV-infected women.

It is particularly important to prevent, screen, and treat tuberculosis in HIV-infected women. Tuberculosis is a leading cause of death among people living with HIV.

Psychosocial and community support

Pregnancy is a stressful time, and healthcare workers may want to talk to patients to ensure that they are receiving enough support from family and friends. Women with HIV usually have additional concerns related to their own health, their child's health, confidentiality, and the possibility that their HIV status might be disclosed to other people. HCWs should refer

HIV-infected patients who need additional support to HIV support organizations, faith-based organizations, and clubs.

Nutritional assessment, counselling, and support

All women need advice on a healthy diet, but HIV-infected pregnant women should be assessed for nutritional problems and receive nutritional support throughout the antenatal period. Nutritional status and weight should be monitored and recorded at each ANC visit. Education and nutritional counselling should be an integral part of each visit as well. HCWs should discuss specific dietary choices that make up a healthy diet for mother and her infant. Nutritional supplements should also be given according to national guidelines:

- Iron
- Folate
- Multivitamins

HIV-specific education and support

HIV infected pregnant women also require *specific* education and support about the following topics:

- Safer infant-feeding options and support for infant-feeding decisions
- Help with disclosing their HIV status to partners, family, and friends
- Education and information about how to manage potential side effects of ARV therapy or prophylaxis
- Referral to determine eligibility for ARV therapy
- Safer sex during pregnancy

PMTCT healthcare workers should stress the importance of attending regular ANC as well as all postpartum care and ongoing comprehensive care and treatment appointments for both mother and her infant/child.

Although not common in Tanzania, the woman infected with HIV-2 should have access to the entire range of antenatal, labour and delivery and postpartum services as well as linkages to other services designed for women infected with HIV-1. Please see Appendix 5-A for more information on specific PMTCT interventions for women infected with HIV-2.

Table 5.1 Essential Package of Integrated Antenatal Care Services for HIV-Infected Women
Patient history: Collect routine information, including medical and obstetric history. Take the patient's medication history. Find out about allergies and use of traditional medicines such as herbal products.
Physical examination and vital signs: Include visual and hands-on examination to assess for current signs or symptoms of illness including AIDS, TB, malaria, and STIs. Stage patient according to WHO clinical staging system.
Abdominal examination: Conduct abdominal examination; include sterile speculum examination when indicated.
Lab diagnostics: In accordance with national guidelines, perform or refer for routine tests including anaemia, syphilis, confirmatory HIV testing, urine analysis and full blood picture (FBP). For HIV-infected patients, conduct CD4 count before referral to CTC.
Tetanus toxoid immunizations: Administer when appropriate.
Nutritional assessment, counselling, and support: Monitor for anaemia, caloric and nutrient intake. Check that the pregnant woman is getting enough nutritious food, and recommend realistic diet changes when needed, based on local resources. Give routine iron, folate, and multivitamin supplements according to national guidelines.
STI treatment: Assess risk for STIs. Diagnose and treat STIs early, according to national guidelines. Counsel and educate about signs and symptoms of STIs, and increased risk of HIV transmission. Educate to avoid transmission or re-infection. Recommend condom use during pregnancy.
HIV-related infections: Assess for signs and symptoms of common infections in pregnancy: urinary tract, respiratory infections, and vaginal candidiasis. Treat promptly according to national guidelines.
Opportunistic infection (OI) prophylaxis: Provide prophylaxis for PCP pneumonia and other opportunistic infections according to national guidelines.
Antimalarials: Malaria is a major cause of high maternal and infant morbidity and mortality. Administer sulfadoxine pyrimethamine as prophylaxis at 20-24 weeks and again at 28-32 weeks (always one month apart).
Screening, prevention, and treatment of TB: Screen all women presenting to ANC who have had a cough for more than 2-3 weeks. Treatment should follow national guidelines.
ARV prophylaxis: Provide ARV prophylaxis according to the national PMTCT guidelines.
ARV therapy during pregnancy: Determine eligibility for treatment through clinical staging or CD4 count where available. If ARV therapy is not available through the PMTCT programme, refer patient to a CTC.
Counselling on infant feeding: All women require infant-feeding counselling and support. When women do not know their HIV status, exclusive breastfeeding should be promoted and supported. Women infected with HIV should exclusively breastfeed for 6 months (See Module 6).
Counselling on birth preparedness: Teach about the importance of delivering in a safe environment with healthcare workers who are knowledgeable and skilled in safer delivery practices, Standard Precautions, and the administration of ARV therapy and prophylaxis for mother and child.
Counselling on pregnancy danger signs: Provide women with information and instructions on seeking early care for pregnancy complications such as bleeding, fever and symptoms of pre-eclampsia: swelling, sudden weight gain, headaches, and changes in vision.
Counselling on HIV/AIDS 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, candidiasis, fever, severe weight loss or signs of any opportunistic infection. Refer to a CTC when appropriate.
Partners and family: Providing psychological and social support is critical to a healthy pregnancy and a healthy family. Refer women, partners, and families to community-based support clubs or organizations where possible. Encourage partners testing and counsel on disclosure. Assess need to test siblings.
Effective family-planning and safer sex: Counsel about consistent use of condoms during pregnancy and throughout postpartum and breastfeeding periods to avoid new HIV infection, re-infection and further transmission. Include long-term family planning with partner involvement when possible. Discuss dual protection methods.

Exercise 5.1 Antenatal Care: Case studies and large group discussion	
Purpose	To review ANC management in the context of HIV/AIDS
Duration	25 minutes
Instructions	<ul style="list-style-type: none"> ▪ Participants will refer to the ANC case studies below. ▪ After reading the first case study, the group can discuss and offer answers to the questions posed in the case study. Participants can also respond if they disagree with any of the answers offered. ▪ This process will be repeated for the second case study. ▪ The trainer will ask the group to discuss particular challenging cases they have experienced in the ANC clinical setting, and how these challenges were resolved.

Exercise 5.1 Antenatal Care: Case studies

Case study 1

Angela, a 19-year-old single woman, was tested for HIV at her first antenatal visit. According to her last menstrual period (LMP), she is approximately 28 weeks pregnant with her first child. She received HIV counselling and testing and was found to be infected with HIV. She has been encouraged to bring her partner in for testing.

1. *What are the routine ANC management steps that should be taken?*
2. *What specific HIV-related care does Angela need?*

Case study 2

During her first visit to the antenatal clinic, Joyce found out she was HIV-positive. When she returned for her second visit she was “treated badly” by the staff and she left. Joyce is now 30 weeks pregnant and although this is her third visit, she has only seen the nurse once. She asks about medicine for her and her baby so that the baby will not get HIV infection. She also tells you that her partner must not find out she is HIV-infected.

1. *What do you tell Joyce?*
2. *How was Joyce’s care affected as a result of her second visit?*
3. *What other potential problems is Joyce facing at home?*
4. *What would be your plan of care for Joyce? (Please refer to Table 5.1.)*

UNIT 2 Antiretroviral Therapy and Prophylaxis for the Prevention of MTCT

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the use of antiretroviral therapy and prophylaxis in PMTCT.

Antiretroviral (ARV) Medications in PMTCT

Definitions

ARV therapy: Long-term use of antiretroviral medications to *treat* maternal HIV/AIDS in order to improve health and slow progression of the disease. ARV therapy also *reduces HIV transmission from mother to infant*.

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

ARV therapy

ARV medications are effective for both treating HIV infection in the pregnant woman and preventing MTCT. They do not cure HIV infection or eliminate HIV from the body. Instead, they slow the replication of HIV, reducing viral load and allowing the immune system to function.

ARV therapy prevents mother-to-child HIV transmission by decreasing viral replication in the mother, thereby reducing the infant's exposure to the virus.

Pregnant women who are HIV-infected and who need ARV therapy for their own health should receive it, according to the national guidelines. ARV therapy always involves using combinations of different ARV medications which fight the HIV virus.

National guidelines on when to start ARV therapy

The National Guidelines on the Clinical Management of HIV and AIDS outline when a patient is eligible for ARV therapy. Nationally, ARV therapy is recommended for patients in the following situations:

- WHO Stage IV disease, regardless of CD4 count
- WHO Stage III disease **AND** CD4 count less than 350 cells/mm³
- All patients whose CD4 count is less than 200 cells/mm³

Women who are receiving effective ARV therapy do not need to be given ARV prophylaxis; however, HCWs in the labour and delivery setting should always try to confirm that a woman has been adherent to ARV therapy and that her HIV infection is properly controlled before deciding not to give ARV prophylaxis. *All infants born to HIV-infected women should receive prophylaxis whether or not the mother is receiving ARV therapy.*

The recommended first-line regimen for HIV-infected patients who are **not** of child-bearing age or pregnant is a stavudine (d4T)+ lamivudine (3TC)+ nevirapine (NVP). Additional guidance on ARV therapy will be given in Module 7: *Comprehensive Care and Support for Mothers and Families with HIV Infection*.

ARV therapy during pregnancy

Women who are diagnosed with HIV during pregnancy and who are eligible for ARV therapy should start ARV therapy as soon as possible. The recommended first-line regimen for HIV-infected pregnant women and women of child-bearing potential is zidovudine (AZT) + lamivudine (3TC) + nevirapine (NVP). Treatment should start as soon as possible even if she is in the first trimester. In some circumstances delaying the start of treatment may be desirable for a woman in the first trimester of pregnancy, although should her clinical or immune status suggest she is severely ill, the benefits clearly outweigh any potential risks to the foetus and ARV therapy should not be delayed.

Women who become pregnant while receiving ARV therapy should continue treatment, but may need to change the medications in the ARV regimen (e.g., efavirenz) to avoid potential birth defects. *Efavirenz (EFV), an ARV medication used nationally may cause birth defects and therefore should not be used for pregnant women in the first trimester. Efavirenz (EFV) should also be avoided in women of childbearing age unless effective contraception can be ensured.*

Pregnant women receiving ARV therapy should receive ongoing care and monitoring through the CTC. When co-infected with TB, additional drug therapy and clinical management are required to minimize side effects that may occur with co-administration of HIV and TB therapy. More information will be given about ARV therapy in Module 7: *Comprehensive Care and Support for Mothers and Families with HIV Infection.*

Managing the first-line ARV therapy regimen for pregnant women

The first-line ARV therapy (AZT+3TC+NVP) used nationally has been proven safe to use in pregnant women. While PMTCT healthcare workers may not be prescribing ARV therapy at their facilities, they need to know basic information about ARV medications.

The first-line ARV regimen should be managed using the following information:

- PMTCT healthcare workers must rule out severe anaemia before starting the triple combination of AZT+3TC+NVP. AZT has been shown to cause anaemia and requires monitoring through the CTC when used for treatment.
- NVP requires a dose increase after initiation. The initial dose of NVP is 200 mg per day for the first 14 days and then 200 mg twice daily. A gradually increase in the dose reduces the frequency of rash.
- PMTCT healthcare workers whose patients are on an ARV therapy regimen that contains NVP must evaluate their patients for side effects and potential adverse events.
 - **Rash:** Rash is a common side effect of NVP which usually occurs in the first 6 weeks of treatment. All rashes require evaluation in order to rule out a potentially dangerous adverse reaction known as Stevens-Johnson syndrome, which can present with skin eruptions or mucosal ulcerations that may involve the mouth, eyes, conjunctiva and the anus. Systemic symptoms of this syndrome include fever, tachycardia, malaise, and joint pain.
 - **Hepatotoxicity** is an important adverse event related to NVP and can be life-threatening. Hepatotoxicity is more common in treatment-naive women with CD4 counts that are higher than 250 cells/mm³. PMTCT healthcare workers should monitor patients receiving NVP for signs and symptoms of liver toxicity, especially jaundice, nausea, and fatigue.
 - PMTCT healthcare workers should teach their patients to monitor themselves for signs and symptoms of hepatotoxicity

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

Antiretroviral medications for prophylaxis

The choice of which ARV medications to use to prevent MTCT is based on the resources and expertise available to administer the regimen at the facility level. The combination regimens for PMTCT, described below, that include AZT, NVP and 3TC should be delivered by PMTCT programmes at sites that also initiate ARV therapy. PMTCT programmes at sites that do not have the capacity to delivery ARV therapy or do not have the ARV medications available, should continue providing the minimum regimen of a single dose of NVP to mother and child. As the infrastructure of the non-ARV therapy providing sites is strengthened, the PMTCT programme will expand to provide the combination regimens.

Within each healthcare facility, the ARV prophylaxis regimen used for women and infants should be consistent. AZT is used for prophylaxis in combination with other ARV medications because of its effectiveness in prevention of MTCT and safety profile in pregnant women and infants.

WHO recommends the use of more effective combination ARV regimens for PMTCT. The national guidelines reflect these recommendations. For a summary of the national recommendations, see Appendix 5-B.

Prescribing ARV medications

ARV medications can be prescribed by Medical Officers, Assistant Medical Officers and Clinical Officers at ANC and labour and delivery facilities. If a mother comes to an ANC facility for a refill, an ANC nurse can renew an existing prescription written by a doctor and dispense the medication to the pregnant women

Women on ARV therapy who become pregnant

- Pregnant women who are already receiving ARV therapy for their own health should continue receiving ARV therapy throughout the pregnancy, during labour and delivery and in the postpartum period. If the ARV therapy regimen contains efavirenz (EFV) it should be replaced by Nevirapine (NVP).
- For infants of women who are on ARV therapy give single dose NVP and AZT syrup 4 mg/kg for 4 weeks. If a woman received at least 4 weeks of AZT-containing ARV therapy during her pregnancy, the duration of AZT can be reduced to 7 days. If AZT is not available, administer a single-dose of NVP 2 mg/kg.

Pregnant women testing HIV-positive during pregnancy who are eligible for ARV therapy

- Women who test HIV-positive during pregnancy and meet the national eligibility criteria for starting ARV therapy, should be started on ARV therapy as soon as possible and at any gestational age.
- The first line ARV therapy for pregnant women is:
 - AZT 300 mg BD + Lamivudine (3TC) 150 mg BD + Nevirapine 200 mg

- NVP requires a dosage increase after initiation. The initiation 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.
- For infants of women who are started on ARV therapy during pregnancy, give single dose NVP and AZT syrup 4 mg/kg for 4 weeks. If a woman received at least 4 weeks of AZT-containing ARV therapy during her pregnancy, the duration of AZT can be reduced to 7 days. If AZT is not available, administer a single-dose of NVP 2 mg/kg.

Sites where ARV Therapy and Combination ARV Medications are Available

Women testing HIV-positive during ANC who are not eligible for ARV therapy

Pregnant women who do not need ARV therapy for their own health should be given combination ARV prophylaxis starting in ANC.

- During **ANC** – start AZT 300 mg BD from 28 weeks or anytime thereafter.
- During **labour** – Give single-dose NVP 200 mg at the onset of labour. Give AZT 300 mg and 3TC 150mg at the onset of labour. Continue AZT every 3 hours and 3TC every 12 hours until delivery.
- During the **postpartum** period - continue AZT 300 mg BD and 3TC 150 mg BD for 7 days
- All infants receive single-dose NVP 2 mg/kg as soon as possible after delivery AND AZT syrup 4 mg/kg BD for 4 weeks or 1 week (7 days) if a mother received at least 4 weeks of AZT during ANC.

Pregnant women presenting during labour who test HIV-positive

- During labour – Give single-dose NVP 200 mg at the onset of labour. Give AZT 300 mg and 3TC 150mg at the onset of labour. Continue AZT every 3 hours and 3TC every 12 hours until delivery.
- During the postpartum period - continue AZT 300 mg BD and 3TC 150 mg BD for 7 days
- All infants receive single-dose NVP 2 mg/kg as soon as possible after delivery AND AZT syrup 4 mg/kg BD for 4 weeks.

Mothers who test HIV-positive after delivery

- All infants receive single-dose NVP 2 mg/kg immediately after birth AND AZT syrup 4 mg/kg BD for 4 weeks. ARV prophylaxis should be started for the infant as soon as he or she can tolerate oral feedings and within 12 hours of delivery.

Sites where Combination ARV Medications are NOT Available

Women testing HIV-positive during ANC who are not eligible for ARV therapy

- During **ANC** – dispense single dose NVP at the 28 weeks visit or anytime thereafter.
 - Educate mother when to take the sdNVP

- Encourage mother to deliver at a health facility
- All infants receive sdNVP as soon as possible after delivery but within 72 hours.

Mothers who test HIV-positive after delivery

- All infants receive single-dose NVP 2 mg/kg immediately after birth but within 72 hours.

Summary of minimum ARV prophylaxis regimen at non-ARV therapy initiating sites

- A single-dose of NVP 200 mg taken by the mother at the onset of labour. Her infant should also receive a single-dose of NVP syrup 2 mg/kg as soon as possible after birth but within 72 hours.
- During ANC dispense sd NVP at 28 weeks or anytime thereafter.
- Pregnant women need to be instructed on how to take the NVP tablet at the onset of labour and to be able to recognize true labour.

Safer delivery and referral to CTCs

HCWs should strongly encourage HIV-infected women to deliver at a health facility where they can benefit from safer delivery practices and have access to HCWs who are knowledgeable about reducing the risk of transmitting HIV to infants.

HCWs in PMTCT should jointly manage care for the newly diagnosed HIV-infected mother with CTCs. Women diagnosed with HIV in ANC care should be referred for ongoing HIV care, treatment and support at the CTC at 42 days after delivery.

Nevirapine resistance

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 to prevent MTCT, resistance may develop.

Resistance is a problem because it means NVP and other medications in its class may be less effective when used in the future, as a part of a combination ARV therapy regimen for the mother. However, recent studies have shown that NVP resistance diminishes with time and that it does not reduce the effectiveness in a subsequent pregnancy.

There is controversy about the significance of resistance caused by single-dose nevirapine when used as prophylaxis. It is still unclear how often resistance occurs, how to prevent it, and how clinically significant it is. Studies are ongoing in a number of countries looking at nevirapine resistance and its potential affect on PMTCT as well as HIV care and treatment programmes.

Preventing nevirapine resistance

To prevent nevirapine resistance, HCWs should avoid providing repeat doses of NVP prophylaxis to the mother and her infant unless it is necessary. When pregnant women are given NVP to take at home, HCWs must educate mothers about when to take the drug, specifically how to tell the difference between true and false labour.

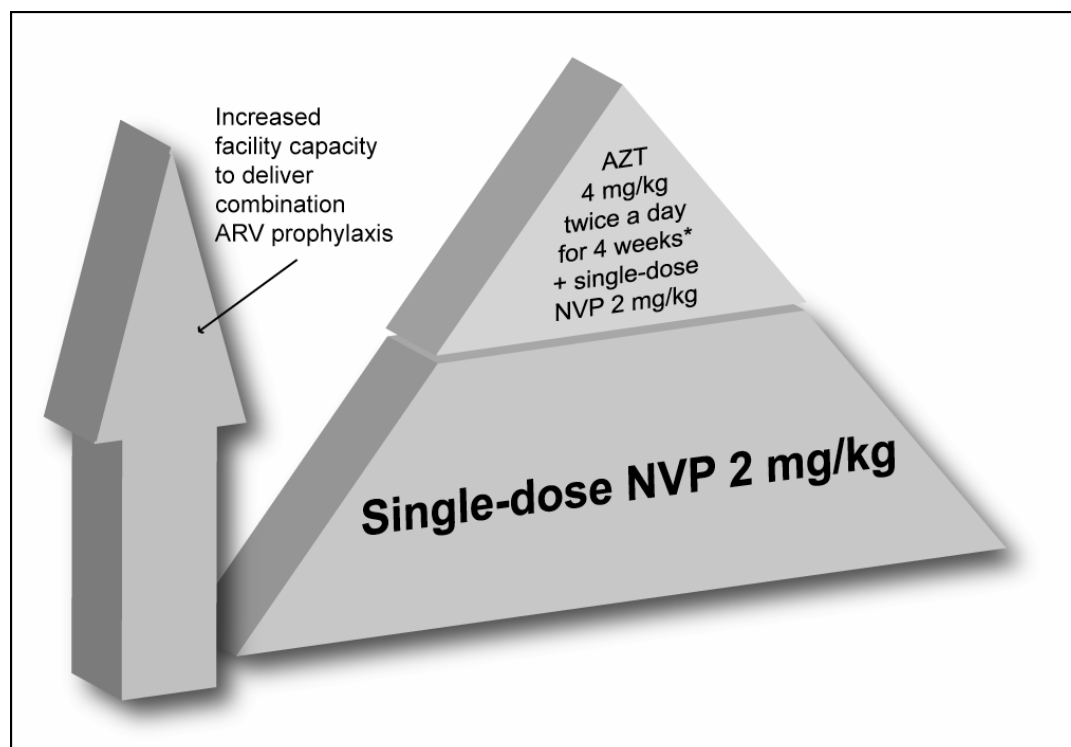
- NVP administration should be clearly documented on medical records to avoid accidental repeat administration.
- If the maternal NVP dose is given during false labour at any point in time, the dose should not be repeated. The infant should receive single-dose NVP plus 4 weeks of AZT if available. If AZT is not available, the infant should receive a single dose of NVP according to the infant's weight.
- If vomiting occurs by the mother within 30 minutes of taking the medication, the NVP dose should be repeated.
- If vomiting occurs by the mother after 30 minutes, no additional dose NVP is needed.
- Combining NVP with other ARV medications may also reduce resistance. This is reflected in the national ARV prophylaxis recommendations. Where additional medications are available, like AZT and 3TC, they can be added to reduce MTCT with greater efficacy and also to decrease the chance of resistance to NVP. Examples of these antiretroviral regimens to prevent MTCT are available in Appendix 5-B

ARV prophylaxis for infants

The choice of which ARV prophylaxis regimen to use for infants should also be determined by resources and expertise at the facility-level. Both AZT and NVP have been proven safe to give to newborns and infants simultaneously. Where possible, infants should be given a combination of two ARV medications to prevent MTCT.

- All HIV-exposed infants should receive single-dose NVP according to the infant's weight as soon as possible after birth but within 72 hours.
- If AZT is available, an infant should receive AZT 4mg/kg twice a day for 4 weeks, in addition to single-dose NVP.
- If a mother received at least 4 weeks of AZT as a part of her ARV prophylaxis or treatment regimen, then the duration of the AZT infant dose can be shortened to 7 days. The infant dose of AZT is administered in addition to single-dose NVP.

Figure 5.1 National PMTCT Prophylaxis for Infants



* May be reduced to 7 days if mother has received at least 4 weeks of AZT as a part of her ARV prophylaxis or treatment regimen.

The prophylactic dose for infants is as follows:

Infant prophylaxis

A single dose of syrup (standard dosage = 2 mg/kg) to be given to the infant as soon as possible after birth, but within 72 hours.

AND

If available, AZT syrup 4mg/kg twice a day for 4 weeks (or 7 days).

WHO Recommendations on the Timing of ARV prophylaxis for infant

Administering ARV prophylaxis regimens to the infant immediately after birth is preferable. The sooner the infant dose is given, the greater protective effect.

- If a mother has not received any prophylaxis during pregnancy or labour and delivery the single dose of NVP and AZT should be given to the infant as soon as he or she can tolerate oral feedings but within 12 hours of delivery. If the AZT is given to the infant, 48 hours or more after delivery, it is unlikely to have any benefit.
- If the minimum PMTCT regimen is used (single dose NVP for mother and infant) the infant dose can be given up to 72 hours after birth. If an HIV-infected mother delivers at home, she is still able to bring her infant in to receive ARV prophylaxis up to 72 hours after the birth. After this time, NVP will no longer be effective in preventing MTCT.
- If a mother delivers within 2 hours of receiving a single dose of NVP, the infant dose should be given immediately.

HCWs should be careful when using different strengths of NVP syrup as the dosing will change according to the strength available.

Table 5.2: Infant ARV prophylaxis dosing

NVP 10 mg/mL (syrup)				
Weight (kg)		Dose (mL)		
1.5-1.7		0.3		
1.8-2.2		0.4		
2.3-2.7		0.5		
2.8-3.2		0.6		
3.3-3.7		0.7		
3.8-4.2		0.8		
4.3-4.5		0.9		
AZT 10 mg/mL (syrup)				
Weight (kg)	AZT mg/kg	Total mg	Dose in ml using AZT 10 mg/mL	Recommended dose
2.3	4	9.2	0.92	0.9 mL
2.4	4	9.6	0.96	1.0 mL
2.5	4	10	1	1.0 mL

2.6	4	10.4	1.04	1.0 mL
2.7	4	10.8	1.08	1.1 mL
2.8	4	11.2	1.12	1.1 mL
2.9	4	11.6	1.16	1.2 mL
3	4	12	1.2	1.2 mL
3.1	4	12.4	1.24	1.2 mL
3.2	4	12.8	1.28	1.3 mL
3.3	4	13.2	1.32	1.3 mL
3.4	4	13.6	1.36	1.4 mL
3.5	4	14	1.4	1.4 mL
3.6	4	14.4	1.44	1.4 mL
3.7	4	14.8	1.48	1.5 mL
3.8	4	15.2	1.52	1.5 mL
3.9	4	15.6	1.56	1.6 mL
4	4	16	1.6	1.6 mL
4.1	4	16.4	1.64	1.6 mL
4.2	4	16.8	1.68	1.7 mL
4.3	4	17.2	1.72	1.7 mL
4.4	4	17.6	1.76	1.8 mL
4.5	4	18	1.8	1.8 mL
4.6	4	18.4	1.84	1.8 mL
4.7	4	18.8	1.88	1.9 mL
4.8	4	19.2	1.92	1.9 mL
4.9	4	19.6	1.96	2.0 mL

Note: AZT dosing for premature infants = 2 mg per kg of body weight (oral) every 12 hours [1.5 mg per kg of body weight (intravenous)], increased to every 8 hours at 2 weeks of age (neonates \geq 30 weeks gestational age) or at 4 weeks of age (neonates < 30 weeks gestational age)

ARV medications used for PMTCT	
Zidovudine (ZDV, AZT)	<ul style="list-style-type: none"> ▪ Class of antiretroviral medications called nucleoside reverse transcriptase inhibitors (NRTIs) ▪ Absorbed quickly after being taken by mouth ▪ Prenatal and neonatal exposure to AZT is generally well-tolerated ▪ May be taken with or without food ▪ 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
Nevirapine (NVP)	<ul style="list-style-type: none"> ▪ Class of antiretroviral medications called non-nucleoside 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 ▪ Can be given as a single dose for mother and a single dose for the infant ▪ Side effects and adverse events, severe rash and hepatotoxicity, can sometimes occur when used for ARV therapy ▪ Can cause hepatotoxicity in women with higher CD4 counts or for whom no CD4 count is available. This does not apply to the use of a

	<p>single dose of NVP for PMTCT.</p> <ul style="list-style-type: none"> ▪ Can cause viral resistance even after one dose.
Lamivudine (3TC)	<ul style="list-style-type: none"> ▪ Class of antiretroviral medications called nucleoside reverse transcriptase inhibitors (NRTIs) ▪ Absorbed quickly after taken by mouth ▪ May be taken with or without food ▪ Major side effects can include headache and nausea

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

Exercise 5.2 ARV Prophylaxis of MTCT: Case studies and large group discussion	
Purpose	To understand when to use different recommended ARV medications as prophylaxis of MTCT in various scenarios.
Duration	30 minutes
Instructions	<ul style="list-style-type: none"> ▪ Trainer will ask one volunteer to read Case Study 1. After reading the case study, the trainer will guide discussion of the case study questions, providing opportunity for participant questions and comments. ▪ This process will be repeated for the other two case studies.

Exercise 5.2 Case Studies - ARV Prophylaxis of MTCT: Case studies and large group discussion

Case Study 1

Sara arrives at your rural clinic in the Lake District for her first ANC appointment. She is infected with HIV. At today's visit she has no complaints, a normal physical exam and you estimate that she is in her 36th week of pregnancy. You note that she has missed multiple referrals to a CTC and this is her third pregnancy.

1. What are your options for ARV prophylaxis and treatment regimens?
2. What laboratory results do you need for Sara?
3. If she delivers a child weighing 2.5 kg, what dose of NVP do you administer?

Case Study 2

You work at the PMTCT programme based in a referral hospital in Dar es Salaam. Joanna is your first patient of the day. You have seen her twice before, once for testing and a second time for post-test counselling following her recent diagnosis with HIV. She tells you that she recently had a successful visit at the CTC, which is located upstairs from the PMTCT programme. Her CD4 count, which is normal, is written on her health card. Today, she is 28 weeks pregnant. Her haemoglobin test is normal.

1. What ARV prophylaxis regimen would you start today and why?
2. What do you give her during labour?

Case Study 3

Saida has come to your healthcare facility in active labour. She was given a 200 mg dose of NVP at her 28 week appointment and she tells you that she took it just before she left home an hour ago.

1. Do you give her another dose of NVP? Please explain your choice.
2. How does this affect the infant dose?
3. What dose do you give the infant if she weighs 3 kg and the NVP syrup concentration is 8mg/ml?

Case Study 4 – Optional, if ARV therapy is available at PMTCT programme

Monica, a patient you have known for many years, comes to her first prenatal appointment at 28 weeks. You have received additional training in delivery of ARV therapy. Your clinic is attached to a CTC within a district hospital. You know that she is eligible for ARV therapy from the records she gives you from the CTC, which state that her CD4 count is 150.

1. Which ARV medications would you choose for Monica?
2. What laboratory information do you need before you start her on ARV medications?
3. What information does Monica need if you decide to start her on the recommended first-line ARV therapy?

UNIT 3 Optimal Management of Women in Labour and Delivery

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Explain interventions for reducing the risk of MTCT during labour and delivery.
- Explain the management of women of unknown HIV status in labour and delivery.

Care of Women in Labour and Delivery

The MTCT of HIV that occurs during labour and delivery can be reduced by use of specific interventions during this time.

Interventions that can reduce MTCT include the following:

Administer ARV therapy and prophylaxis during labour in accordance with national guidelines.

- Continue ARV therapy or administer ARV prophylaxis during labour to reduce maternal viral load and provide protection to the infant.
- Mark medical records accurately with all medications given; name, dosage and time.

Use Standard Precautions (good infection prevention practices) for all patient care.

- Use protective gear, safely use and dispose of sharps, sterilize equipment, and safely dispose of contaminated materials.

Minimize vaginal examinations.

- Perform vaginal examinations only when absolutely 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.

Avoid artificial rupture of membranes.

- Use a partogram to measure the progress of labour.
- Avoid early rupture of membranes (before 7cm) unless necessary.

Avoid unnecessary trauma during delivery.

- Avoid invasive procedures, including scalp electrodes or scalp sampling.
- Avoid routine episiotomy.
- Minimize the use of instrumental vaginal delivery.

Minimize 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 oxytocic medications and controlled cord traction.
- Perform uterine massage.
- Repair genital track lacerations.
- Carefully remove all products of conception.

Use safe transfusion practices.

- Minimize the use of blood transfusions.
- Use only blood screened for HIV, hepatitis B and C, and, when available, syphilis and malaria.

Special labour and delivery considerations

Most often, induction of labour involves the artificial rupture of membranes. As prolonged rupture of membrane is associated with increased risk of HIV transmission, this may be dangerous for HIV-infected women. The need to induce labour should be carefully assessed and performed only when necessary.

Many women deliver outside of health institutions with the assistance of home birth attendants – both trained and untrained. Home birth attendants should receive information about the mechanisms of MTCT and their risk of infection with HIV during delivery. Training for home birth attendants should include basic PMTCT skills, use of Standard Precautions and safer delivery practices.

Interventions to Reduce MTCT in Labour and Delivery

- Administer ARV therapy or prophylaxis during labour in accordance with national guidelines.
- Use Standard Precautions.
- Minimize vaginal examinations.
- Avoid prolonged labour.
- Avoid artificial rupture of membranes.
- Avoid unnecessary trauma during delivery.
- Minimize the risk of postpartum haemorrhage.
- Use safe transfusion practices.

Elective Caesarean section is known to reduce MTCT of HIV, but is not a universal option. When performed before the onset of labour or membrane rupture, Caesarean sections may reduce the risk of MTCT.

Care after a spontaneous abortion (miscarriage)

HIV-infected women 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 counselling and testing.
- Assess for the signs and symptoms of HIV infection.
- Consider using antibiotics after uterine evacuation, if performed, when a woman is HIV-infected.
- Conduct family planning counselling.

Exercise 5.3 Obstetric Practices and HIV: Case study and small group discussion	
Purpose	To exercise clinical judgment about safe practices in the labour and delivery setting through discussion of a case study
Duration	25 minutes
Instructions Small Group Discussion	<ul style="list-style-type: none"> ▪ Participants will be divided into three groups. ▪ Using the case study below discuss scenarios, and recommend a course of action.
Instructions Large Group Discussion	<ul style="list-style-type: none"> ▪ Participants will reconvene in the large group, and each sub-group will be asked to provide their recommendations. In the large group discussion, alternate answers or strategies will be discussed.

Exercise 5.3—Obstetric practices and HIV: Case study

You are a doctor in a busy labour and delivery ward. Today you are teaching 3 medical students. A new patient arrives and states that she has been labouring at home for 5 hours. Her contractions are 8 minutes apart. She tells you she tested positive for HIV at an ANC clinic in the rural area where she lives.

1. What should you keep in mind when performing the initial vaginal exam on this patient?

You assess the patient and she is dilated to 6 cm; foetal heart tones are within normal limits. However, her membranes have not ruptured yet. You are under pressure from your director to attend to the 4 other labouring women in the clinic this evening.

2. Do you rupture her membranes to advance her labour?

Four hours go by and a nurse comes to tell you that the baby's heart rate is decelerating and does not correspond to a contraction. Upon inspection of the birth canal, you see that the baby's head is engaged but that the amniotic sac is still intact.

3. At this point do you rupture her membranes to advance labour?

4. Would you perform a routine episiotomy at this point?

Management of Women with Unknown 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 so she can receive appropriate care.

HIV counselling, testing, and administration of ARV prophylaxis is guided by the stage of labour in which the woman presents:

Early labour

- Provide pre-test information on HIV.
- Test for HIV unless the patient refuses testing.
- When appropriate, offer ARV prophylaxis according to national PMTCT guidelines.
- Provide post-test counselling before or after delivery, depending on the woman's condition.

Late labour (active phase)

Defer counselling and testing until after delivery and before discharge. At that time:

- Provide pre-test information on HIV.
- Test for HIV unless the patient refuses testing.
- When appropriate, offer single-dose NVP and AZT, where available, for the infant according to national PMTCT guidelines.
- Provide post-test counselling.

Women and their infants should not be given ARV prophylaxis unless the mother has been tested for HIV and found to be HIV-positive.

Counselling in labour and delivery

Providing counselling and testing in labour and delivery is challenging because labour and delivery settings are usually very busy and have little privacy. Women in labour need to be as comfortable as possible and should receive counselling in a confidential manner.

Before beginning a counselling session, ensure that the woman is comfortable and is between contractions. You may ask the woman to give you a sign to let you know when contractions begin and end.

- When the woman has a contraction, wait until it ends before resuming your session.
- Speak in soft tones, but make sure that the woman can hear you.
- Use a temporary screen or curtain around the bed for privacy, if one is available.
- The session can be conducted in a corridor, waiting area, or any other quiet place with some degree of privacy.

Women may be uncomfortable about having family members or others present during the counselling session. To maintain privacy, HCWs may ask others to leave.

Conducting the Labour and Delivery Pre-Test Session

Pre-test sessions are shorter in the labour and delivery setting than in ANC because information is presented between contractions. Only the most critical information is given during labour; the non-critical information can be given in the post-test session, which often takes place after labour or before discharge.

Example of Essential Pre-test Information Script for Counselling Women in Labour and Delivery

- Hello, I am checking to make sure you have had all of the tests you needed for this pregnancy.
- Your ANC card shows you have not been tested for HIV during your pregnancy. Do you know what HIV is?
- *(If the women says no)* HIV is the virus that causes AIDS. Not everyone who has HIV looks or feels sick.
- If you have HIV, you can pass it to your baby during pregnancy, labour and delivery, and breastfeeding.
- This is why we recommend that all pregnant women have an HIV test.
- If the test shows you have HIV, we can give you medicine immediately to lower the chance of passing HIV to your baby. After you give birth, the baby will also receive medicine, and we can refer you to where you, your baby, and the rest of your family can get care and treatment.
- The HIV test will be done by drawing blood (or by a simple finger-prick).
- HIV testing is private. This means that *only* you and healthcare workers who are caring for you know your HIV test results.
- You have the right to refuse testing for HIV but we strongly recommend that you accept testing to help protect your baby.
- Unless you refuse, we will test you now and give you and your baby the best care based on your test results.
- Before we go any further, what concerns or questions do you have about HIV testing?

Adapted from: HHS-CDC, WHO. *Testing and Counselling for Prevention of Mother-to-Child Transmission of HIV (TC for PMTCT): Support Tools*. December 2005

Conducting the Labour and Delivery Post-test Session

To reduce the mother's worry and to allow for as much time as possible for giving ARV prophylaxis, HCWs should provide HIV test results as soon as they become available. If the post-test session is occurring during labour it should be as short as possible and include only essential messages. More detailed counselling, containing information discussed in Module 4: *Counselling and Testing*, should be provided after delivery.

Exercise 5.4 HIV Testing and ARV Prophylaxis During Labour and Delivery: Case studies and small group discussion	
Purpose	To understand the use of ARV prophylaxis for prevention of MTCT by using various scenarios
Duration	35 minutes
Instruction	<ul style="list-style-type: none"> ▪ Participants will be divided into groups and assigned one case study on the next page. ▪ Each group will answer and record the answers to the case study questions on a flip chart. These answers will be presented to the large group, using a flipchart, for further discussion ▪ The trainer will lead a discussion of the case study answers and any alternate or additional answers to those presented.

Exercise 5.4—HIV Testing and ARV Prophylaxis during Labour and Delivery: Case Studies

Case study # 1

Natu has just arrived at your hospital to have her baby. She tells you she has a card from Kagera Regional Hospital but, in her rush to get to the hospital, she left her card at home. You would like to ask Natu if she has been tested for HIV, but the room is crowded and you do not want to discuss this in front of others. Natu is in early labour and contractions are now regular.

1. How can you find out whether Natu has been tested for HIV?
2. If you determine that Natu was tested and is HIV-positive, what will be your next step?

Case study # 2

Amina, who is HIV-infected, gave birth yesterday to a beautiful baby girl at home with a home birth attendant. This was her fourth child and the baby was delivered within an hour from the start of her first contractions. Amina never had the opportunity to take the nevirapine tablet that had been given to her at the clinic at her 28-week appointment. Today, she has come to the health facility with her baby.

1. When Amina asks if she should take the tablet now, what do you tell her?
2. When should her dose of NVP (200 mg) have been taken?
3. Should you give NVP to her new daughter? (NVP is the only available ARV medication)
4. Amina asks you: "Will my little girl still be protected from HIV?" What will you tell her?

Case study # 3

Bupe arrives in labour and delivery. She has received no antenatal care and was never tested for HIV. She is in advanced labour with contractions about 2 minutes apart. On examination you find she is 7 centimetres dilated. She asks you about HIV testing, and says she is worried that she could be infected and pass it on to her baby.

1. Will you provide HIV testing before delivery?
2. What can you tell her about protecting her baby after delivery?

Case study # 4

Mariam arrives at the labour and delivery ward at 40 weeks gestation. She presents you with her ANC card which states "PMTCT1," and a medical record sheet from a care and treatment clinic (CTC), which states that she has been taking AZT+ 3TC+NVP for one year. She went into labour one hour ago and this is her first child.

1. Do you need to test her for HIV?
2. What else do you want to know about Mariam?
3. Do you administer nevirapine prophylaxis to her?
4. Do you administer nevirapine prophylaxis to the infant?
5. What procedures do you want to avoid during delivery?
6. What additional counselling does Mariam need?

Obstetric Care in the Home Delivery Setting

One of the main causes of maternal deaths in developing countries, (where 1 woman in 16 dies of pregnancy-related complications), is that few births are attended by a skilled HCW. It is therefore crucial that HCWs continue to strongly urge women to give birth at health facilities where skilled HCWs can address complications.

However, for women who do give birth at home, the risk of home delivery can be reduced if women and home birth attendants know about safer obstetric practices and referral for complications. HCWs may therefore decide to train home birth attendants in basic PMTCT skills as a measure to protect the health of women who choose to give birth at home.

UNIT 4 Postpartum Management of Women and Infants

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe guidelines for immediate care of HIV-exposed infants.
- Describe the postpartum care of women with HIV infection.

Post-delivery Care of HIV-exposed infants

Immediate care of the newborn

The immediate care of the newborn exposed to HIV follows standard best practices.

Regardless of the mother's HIV status, all infants are kept warm after birth and are handled with gloved hands until maternal blood and secretions have been washed off.

The infant's mouth and nostrils are wiped with a wet gauze or towel as soon as the head is delivered.

All infants born to HIV-infected women should receive ARV prophylaxis as soon as possible after birth. Infants born at home should be brought into the health facility for prophylaxis.

For infants born to HIV-infected women, HCWs should minimize trauma to the infant and reduce the infant's exposure to infected blood and maternal secretions:

- Clamp the cord immediately after birth, and avoid milking the cord (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 baby 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.
- Wipe the infant dry with a towel.
- Determine the mother's feeding choice. If she is using replacement feeding, place the infant on her body for skin-to-skin contact and provide help with the first feed. If she is breastfeeding, place the infant on the mother's breast.
- Administer BCG and polio vaccines according to national guidelines.
- For non-breastfed infants, administer vitamin A 50,000 IUs at birth or within 6 months. Breastfed infants do not receive vitamin A before they are 6 months old.

ARV prophylaxis

- Infants born to HIV-infected mothers should receive ARV prophylaxis as soon as possible after birth. If only single-dose NVP is used it needs to be given as soon as possible but within 72 hours of birth. The efficacy of NVP for PMTCT is unknown if it is given after 72 hours.
- Where available, a one week (7 day) or 4 week course of AZT prophylaxis should also be given to the infant in addition to single dose NVP. If a mother received at least 4 weeks of AZT during her pregnancy, the course of AZT can be shortened to one week (7 days).

Follow-up of HIV-exposed infants

All infants born to mothers with HIV infection should be followed at the under-five clinics. HIV-related issues should be addressed at these visits. Module 7 contains additional information about the comprehensive care needs of HIV-exposed infants. HCWs should provide mothers with information about the importance of following up with all appointments for infants:

- Close follow-up care is particularly important for infants born to mothers with HIV infection to detect early signs of HIV infection and to provide preventative care. Infant immune systems are immature and HIV can progress very rapidly.
- Without treatment, more than half of perinatally-infected children will die before their second birthday.
- Infants need to begin cotrimoxazole prophylaxis (CPT) at 4-6 weeks of age to protect against PCP and continue until their HIV status has been determined. If the infant is HIV-negative, CPT should be discontinued.
- Schedule a follow-up appointment for the infant before discharge.

Postpartum care of HIV-infected women

HIV-infected women should be encouraged to return for postpartum care at 7, 28 and 42 days postpartum. Women should be referred to CTC after 42 days. Postpartum care involves the planning and scheduling of all comprehensive care and treatment services for mother and her family. This will be discussed in greater detail in Module 7 – *Comprehensive Care and Support for Mothers and Families with HIV Infection*.

When providing postpartum care to women infected with HIV, the following areas require special attention:

Post-delivery care

- Using Standard Precautions when assessing vaginal bleeding.
- Disposing of blood-stained linens or pads safely.

HIV Counselling and Testing

- Women who received HIV testing during labour and delivery should receive additional post-test counselling postpartum.
- Women of unknown HIV status should receive pre-test information, counselling and HIV testing unless they decline.
- Partners of HIV-positive women who desire HIV testing should receive pre-test information, counselling and testing.

Counselling for safer infant feeding

All women, regardless of HIV status, should receive counselling about safer infant-feeding during postpartum care according to infant-feeding guidelines.

- Ensure that the mother chooses an infant-feeding method before she leaves the hospital or clinic.
- Support the mother's choice of infant-feeding method.
- Provide assistance with infant-feeding and observe proper feeding technique before discharge.

Infant-feeding counselling is an immediate priority in the postpartum period.

ARV prophylaxis for mother and infant

- Teach mother how to administer ARV prophylaxis to infant and to self.

- Give single dose NVP to the infant alone or in combination with AZT where available.
- Give 1 week (7 days) or 4 week course of AZT to infant.
- Give AZT and 3TC to mother for 1 week (7 days) where available.

Postpartum Education

Regardless of HIV status, the mother will need the following information before discharge:

- Infant feeding
- Care of the infant's umbilicus
- Proper hygiene: changing diapers and washing the infant
- Recognizing signs and symptoms of postpartum infection
- Recognizing signs and symptoms of infant illness
- Recognizing signs and symptoms of HIV infection in the infant
- Accessing help in the event of haemorrhage
- Perineal and breast care
- How to dispose of potentially infectious materials such as lochia and blood-stained sanitary pads
- Use of condoms for contraception and HIV infection prevention

Signs and symptoms of postpartum infection

Review with the new mother the following symptoms of infection before she leaves the clinic or hospital, and provide her with information on where to seek treatment for:

- Burning with urination
- Fever
- Fast heart beat or increased pulse rate
- Foul smelling lochia
- Cough, sputum, shortness of breath
- Redness, pain, pus, or discharge from incision or episiotomy
- Severe lower abdominal tenderness

Before discharge

- Administer Vitamin A to the mother according to the national guidelines.
- Schedule all postpartum appointments for the mother and infant.
- Refer all HIV-infected mothers and their infants to a CTC for comprehensive services at the 42-day postpartum visit.

Postpartum care of women with unknown HIV status

Women whose HIV status is unknown should receive the same postpartum care as women with HIV infection, as outlined above. They should be encouraged to be tested for HIV and to follow national recommendations for feeding their infants.

HIV testing after delivery can assist women infected with HIV to:

- Start ARV prophylaxis for the infant.
- Choose safer infant-feeding options.
- Receive HIV treatment, care and support for herself, her infant, and her family.

Postpartum family planning counselling

Family planning (FP) is part of a comprehensive public health strategy to prevent MTCT. Family planning methods should be discussed with women during ANC and again soon after

delivery. Choosing an effective contraceptive method should be based on an individual's health and ability to safely implement the method of choice.

Women should have access to the chosen method within 6 weeks after delivery to avoid unintended pregnancy or the risk of new infection. Condom use should be promoted for HIV-infected women and their partners for both contraception and their ability to decrease transmission of HIV infection. However, their use depends upon a woman's ability to negotiate condom use with her partner. For additional information on how to conduct a family planning counselling session for an HIV-infected women and her partner see Appendix 2-A in Module 2: *Overview of HIV Prevention in Mothers, Infants, and Young Children*.

Certain considerations apply to HIV-infected mothers who breastfeed.

- Combination oral contraceptives have been known to decrease breastmilk production.
- Progestin-only contraceptives should be started after 6 weeks postpartum for the breastfeeding mother.
- Women should be encouraged to use dual protection, a condom and a second form of birth control, in order to avoid re-infection with a different strain of HIV.

Comprehensive care of HIV-infected mothers and families

HIV-infected mothers will need additional care and treatment services. HCWs should facilitate referrals and linkages to HIV/AIDS treatment, care and support programmes to ensure that the mother receives ongoing comprehensive care, including the following:

- Physical assessment
- Infant-feeding support
- Sexual and reproductive health care, including family planning
- Screening for cervical and breast cancer
- HIV treatment, care, and support
- Prevention and treatment of opportunistic infections, including tuberculosis
- Prevention and treatment of malaria
- Immunizations
- Nutritional counselling and support
- Social and psychosocial support
- Home-based care as needed

For additional information on the delivery of comprehensive care to women and families, see Module 7: *Comprehensive Care and Support for Mothers and Families with HIV Infection*.

Increasing postpartum follow-up

The postpartum follow-up rate nationally is very low. Efforts to increase uptake of postpartum care require education during the antenatal period and involvement of HIV support groups or specialized centres that provide postpartum care for HIV-infected mothers.

Exercise 5.5 Supporting Postpartum Follow-Up: Group discussion	
Purpose	To find ways to improve postpartum follow-up
Duration	25 minutes
Activities	<p>In a trainer-led discussion, participants will examine the following questions:</p> <ul style="list-style-type: none"> ▪ What are the biggest challenges to uptake of postpartum follow-up in your communities? ▪ What are some ways to increase the uptake of postpartum services? ▪ What suggestion do you have for improving postpartum follow-up for women who deliver at home? ▪ Are there key community agencies or groups that might be able to help bridge this gap between ANC and postpartum health and support services?

Module 5: Key Points

- Specific PMTCT interventions include ANC care, ARV therapy and prophylaxis, safer delivery procedures and counselling and support for safer infant feeding.
- ARV therapy is the long-term use of antiretroviral medications to manage maternal HIV/AIDS and prevent MTCT; ARV prophylaxis is the short-term use of antiretroviral medications to reduce MTCT of HIV.
- Pregnant women who need ARV therapy for their own health should be started on therapy as soon as possible.
- When ARV therapy is not indicated, ARV prophylaxis should be used to prevent MTCT.
- The ARV prophylaxis regimen should be chosen according to available resources and expertise available at the facility-level.
- Health facilities that provide ARV therapy will also provide combination ARV prophylaxis.
- The minimal ARV prophylaxis regimen used nationally is a single-dose NVP for the mother at the onset of labour and a single dose to the infant.
- If the minimal ARV prophylaxis regimen is used, a single-dose of NVP should always be given to the HIV-exposed infant as soon as possible, but within 72 hours after birth.
- MTCT of HIV in labour and delivery can be reduced by using safer obstetrical practices. Safer delivery procedures are those that minimize the amount of contact between the newborn and a mother's blood.
- National guidelines provide recommendations for testing of women of unknown HIV status in early labour and soon after delivery.
- The postpartum period is the time to implement the plan for the ongoing comprehensive care needs of a mother and her family.

APPENDIX 5-A MTCT Services for the Woman who is HIV-2 Infected

The woman infected with HIV-2 should have access to the entire range of antenatal, labour and delivery, and postnatal services as well as linkages to other services designed for women infected with HIV-1. Offering the mother infected with HIV-2 short course ARV prophylaxis to prevent MTCT should follow National Policy and Guidelines that exist.

The following information, adapted from the CDC (October 1998) provides pertinent background on HIV-2 for consideration:

- HIV-2 infections are predominantly found in West Africa
- HIV-2 infections:
 - Have the same mode of transmission as HIV-1
 - Also progress to AIDS
 - Are associated with similar opportunistic infections
 - Appear to be less transmissible from mother-to-child than HIV-1
 - Develop more slowly and appear less virulent than HIV-1
- Testing for both HIV-1 and HIV-2 should be considered in the following situations:
 - In settings where HIV-2 is present
 - When illnesses (such as opportunistic infections) appear in someone whose HIV-1 test is negative
 - When an HIV-1 Western blot indicates certain indeterminate test band patterns
- The best approach to clinical treatment of HIV-2 is unclear. The following factors, however, should be considered:
 - Non-nucleoside reverse transcriptase inhibitors (NNRTIs), such as NVP are not as effective against HIV-2. Therefore, AZT prophylaxis should be considered for expectant mothers who are infected with HIV-2 and their newborn infants to reduce MTCT risk, especially for women who become infected during pregnancy.
 - Treatment response is more difficult to monitor in HIV-2 infected women than in women infected with HIV-1. CD4 counts and physical signs of immune deterioration are currently been used for monitoring
 - The woman's wishes should be considered: the healthcare provider should have a frank discussion with a woman infected with HIV-2 to explain the prevailing policy and practice and to support her in making a decision with which she is comfortable.
 - Continued surveillance to monitor the spread of HIV-2 is necessary.

Infant Feeding

The woman infected with HIV-2 should be advised to follow national infant-feeding recommendations for women infected with HIV-1.

APPENDIX 5-B National Recommendations on ARV Prophylaxis to prevent MTCT: Principles, Timing and Dosing

HIV-related treatment, care and support must be provided during the antenatal and postpartum periods. HIV-infected pregnant women with indications for starting ARV therapy should begin receiving therapy as soon as possible. All HIV-exposed infants should be followed-up for diagnosis of HIV, prophylaxis of opportunistic infections and ongoing treatment, care and support.

National recommendations about ARV prophylaxis regimens are based on the effectiveness of the regimen in preventing MTCT and the advantages and disadvantages of the regimen.

General principles for the recommendations:

Giving ARV medications during the antenatal period prevents HIV transmission *in utero*. If NNRTI-based ARV therapy is started within 6 months of childbirth, mothers who received single-dose NVP (sdNVP) as ARV prophylaxis to prevent MTCT are at risk of sub-optimal response to therapy due to viral resistance that develops after receiving single dose NVP.

Because women receiving single-dose NVP are at risk for developing resistance to NVP, strategies to reduce this risk are recommended.

- The addition of a 7-day AZT/3TC tail beginning in labour and continuing postpartum is recommended to reduce the risk of developing resistance to NVP.

All regimens described in the table below are administered by mouth. Paediatric formulations are available for the main medications used in current prophylactic regimens to prevent MTCT (AZT and NVP). It is important to monitor for side effects and support maternal and infant adherence

APPENDIX 5-B National Recommendations on ARV Prophylaxis to prevent MTCT: Principles, Timing and Dosing

(continued)

COMBINATION ARV PROPHYLAXIS REGIMENS TO PREVENT MTCT				
REGIMEN	ANTENATAL	INTRAPARTUM	POSTPARTUM	POSTNATAL
Recommended: AZT + sdNVP AND 7 day maternal AZT + 3TC tail to reduce NVP resistance	AZT 300 mg twice a day starting at 28 weeks or as soon as possible thereafter	AZT 600 mg at onset of labour	Maternal: AZT 300 mg twice a day for 7 days AND 3TC 150 mg twice a day for 7 days	Infant: sdNVP 2 mg/kg oral suspension immediately after birth ¹
		or AZT 300 mg at onset of labour and every 3 hours until delivery		
Recommended if mother presents during labour: AZT + sdNVP AND 7 day maternal AZT + 3TC tail beginning with the addition of 3TC at the onset of labour to reduce NVP resistance	None	AZT 600 mg at onset of labour	Maternal: AZT 300 mg twice a day for 7 days AND 3TC 150 mg twice a day for 7 days	Infant: sdNVP 2 mg/kg oral suspension immediately after birth ¹
		or AZT 300 mg at onset of labour and every 3 hours until delivery		

APPENDIX 5-B DRAFT National Recommendations on ARV Prophylaxis to prevent MTCT: Principles, Timing and Dosing *(continued)*

MINIMUM ARV PROPHYLAXIS REGIMENS TO PREVENT MTCT				
REGIMEN	ANTENATAL	INTRAPARTUM	POSTPARTUM	POSTNATAL
Minimum regimen: sdNVP to mother and infant	None	sdNVP 200 mg at onset of labour	Maternal: None	Infant: sdNVP 2 mg/kg oral suspension
Minimum regimen when mother presents in late labour: Postnatal infant sdNVP	None	None	Maternal: None	Infant: sdNVP 2mg/kg oral suspension

- ¹ The infant sdNVP dose can be given immediately after delivery or within 72 hours. It is preferable to give sdNVP as soon as possible after childbirth and before discharge from the health facility. If a mother does not receive any ARV prophylaxis or if delivery occurs less than two hours after she is given the intrapartum dose, the infant sdNVP should be given immediately after birth. AZT should be given to the infant for 4 weeks.
- ² The infant course of AZT should be extended to 4 weeks if a mother received <4 weeks of AZT during the antenatal period.

Adapted from: WHO. Antiretroviral Medications for Treating Pregnant Women and Preventing HIV Infection in Infants in Resource-limited Settings Towards Universal Access, Recommendations for a Public Health Approach, 2006 version. Available at: <http://www.who.int/hiv/pub/guidelines/pmtctguidelines2006.pdf>

APPENDIX 5-C WHO Recommendations: ARV Prophylaxis Regimens: Rating and Advantages/Disadvantages

¹If the woman receives at least 4 weeks of AZT during pregnancy, omission of maternal NVP dose may be considered. In this case the NVP infant NVP dose must be given immediately

Rank	Time of Administration			Advantages	Disadvantages
	Pregnancy	Labor	Postpartum		
Recommended	AZT (≥28 wks gestation)	Sd-NVP ¹ + AZT/3TC	<u>Maternal:</u> AZT/3TC x7 days ¹ <u>Infant:</u> SD NVP ¹ + AZT x 7days ²	<ul style="list-style-type: none"> Highly effective regimen Substantially reduces <i>in utero</i> and intrapartum transmission The AZT/3TC tail given to the other reduces the development of her becoming resistant to NVP AZT to infants reduces the risk of resistance to NVP in those who become infected 	<ul style="list-style-type: none"> Longer and more complex than other regimens
Alternative	AZT (≥28 wks gestation)	Sd-NVP	<u>Infant:</u> Sd-NVP + AZT x7days ²	<ul style="list-style-type: none"> Highly effective regimen Substantially reduces <i>in utero</i> and intrapartum transmission AZT to infants reduces the risk of resistance to NVP in those who become infected 	<ul style="list-style-type: none"> Higher risk of NVP resistance Probable sub-optimal viral response if NNRTI-based ARV therapy is initiated in women within 6 months of childbirth
Minimum	-	Sd-NVP + AZT/3TC	<u>Maternal:</u> AZT/3TC x7 days <u>Infant:</u> Sd-NVP	<ul style="list-style-type: none"> Effective in reducing MTCT The AZT/3TC tail given to the other reduces the development of her becoming resistant to NVP 	<ul style="list-style-type: none"> Less effective than recommended regimen Does not reduce <i>in utero</i> transmission More complex to deliver than Sd-NVP alone
Minimum	-	Sd-NVP	<u>Infant:</u> Sd-NVP	<ul style="list-style-type: none"> Effective in reducing MTCT Simplest regimen to administer 	<ul style="list-style-type: none"> Less effective than recommended regimen Does not reduce <i>in utero</i> transmission High risk of resistance to NVP Probable sub-optimal viral response if NNRTI-based ARV therapy is initiated in women within 6 months of childbirth

after birth, AZT is recommended for 4 weeks instead of 1 week, and the mother will not require 3TC during labour as well as AZT and 3TC postpartum.

² If the mother receives less than 4 weeks of AZT during pregnancy, AZT is recommended for 4 weeks instead of 1 week

Module 6 Infant Feeding in the Context of HIV Infection



Total Module Time: 430 minutes (7 hours, 10 minutes)

MODULE OBJECTIVES

After completing the module, the participant will be able to:

- Describe the importance of infant feeding in PMTCT.
- Describe the national infant-feeding guidelines for mothers who are HIV-uninfected, HIV-infected, and of unknown HIV status.
- Describe steps in the Baby-Friendly Hospital Initiative.
- Identify the advantages and disadvantages of the main infant-feeding options for women with HIV.
- Provide an overview of infant-feeding counselling for women, both HIV-infected and uninfected.
- Explain the importance of the postpartum follow-up and support required for appropriate and safer infant feeding.
- Identify and describe management of breast-related conditions.
- Demonstrate safe preparation of commercial formula and home-modified feeds.
- Discuss the introduction and support of complementary feeding for children 6 to 24 months.
- Describe additional nutrition requirements for HIV-infected breastfeeding mothers.

This module is designed to provide the healthcare worker (HCW) with the basic knowledge and introductory skills for infant-feeding counselling in the context of PMTCT. Additional infant-feeding counselling training should be considered when possible. MOHSW/UNICEF/WHO offer a variety of training on integrated infant-feeding counselling.

UNIT 1 Overview of Global and National Infant-Feeding Guidelines

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the importance of infant feeding in PMTCT.
- Describe the national infant-feeding guidelines for mothers who are HIV-uninfected, HIV-infected and of unknown HIV status.
- Describe steps in the Baby-Friendly Hospital Initiative.

Basic facts on malnutrition, infant feeding and child survival

Malnutrition is the underlying cause of death in about 60% of children younger than five years old worldwide and in Tanzania. In Africa as a whole, malnutrition is directly or indirectly responsible for the deaths of about 50% of children under the age of five.

Poor feeding practices, such as those that provide insufficient nutrition or contribute to diarrhoea, are a major cause of low weight, illness and death in children.

Infant-feeding counselling and support can improve infant-feeding practices and, in turn, prevent malnutrition and reduce the risk of death in children. For HIV-infected mothers, counselling and support promotes improved infant-feeding practices that also reduce MTCT. The National Strategy on Infant and Young Child Nutrition states that all HIV-infected mothers should receive counselling on how to meet nutritional requirements of their infants and be informed of risks and benefits of various infant-feeding options.

Key Infant-Feeding Terms

Exclusive Breastfeeding (EBF): Feeding an infant ONLY breastmilk and no other liquids or solids, with the exception of prescribed drops or syrups consisting of vitamins, mineral supplements or medicines.

Replacement Feeding (RF): Feeding a child who is not receiving any breastmilk with a diet that provides all the nutrients the child needs. During the first 6 months, this should be with a suitable breastmilk substitute--commercial formula or home-prepared animal milk with micronutrient supplements.

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

Complementary Feeding (CF): Feeding any food, whether manufactured or locally prepared, that is suitable as a complement to breastmilk or to infant formula, when either becomes insufficient to satisfy the nutritional requirements of the infant. Such food is also commonly called "weaning foods" or "breastmilk supplements."

Infant-feeding guidelines for mothers who are *not HIV-infected* and mothers with *unknown HIV status*

Many studies have confirmed that, in the absence of maternal HIV infection, breastmilk is the best food for infants. Breastmilk provides all of the nutrition and water infants need in the first 6 months of life and protects children against childhood illnesses like diarrhoea, severe ear

infections and pneumonia. Breastfed infants have lower mortality rates than non-breastfed children. In addition, breastfeeding reduces a mother's risk of some cancers and helps space her pregnancies.

Because of the benefits of breastfeeding, international organizations and the national government have the following guidelines for women who are not HIV-infected or who do not know their status:

- Breastfeed **exclusively** for the first six (6) months of life.
- Continue breastfeeding for up to 2 years or longer.
- After the infant reaches 6 months of age, introduce safe, nutritious complementary foods.

Prevent HIV infection during pregnancy or breastfeeding

If a woman becomes infected with HIV during pregnancy or lactation, the risk of MTCT is very high. Therefore it is very important that mothers receive information about the risk of becoming infected with HIV late in pregnancy or during breastfeeding.

Women with unknown HIV status should be encouraged to be tested for HIV.

The Baby-Friendly Hospital Initiative: Ten Steps to Successful Breastfeeding

The Baby-Friendly Hospital Initiative (BFHI) is a worldwide project, launched in 1991 by the World Health Organization and UNICEF, which recognizes that good maternity care promotes breastfeeding. 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. Every facility providing maternity services and care for newborn infants should adhere to the BFHI 10 Steps to Successful Breastfeeding.

A list of frequently asked questions about integrating PMTCT interventions with the Baby-Friendly Hospital Initiative is included in *Appendix 6-B*.

HCWs should become familiar with this initiative and the National Regulation of Marketing of Breastmilk Substitutes and Designated Products and promote their implementation in their clinical environment (See *Appendix 6-C*).

Step 1: Have a written breastfeeding policy that is routinely communicated to all health care staff.

Why have a policy?

- It requires a course of action and provides guidance.
- It helps establish consistent care for mothers and babies.

How should it be presented?

- It should be written in the most commonly used language.
- It should be available to all staff caring for mothers and babies.
- It should be displayed in areas where mothers and babies are cared for.

Step 2: Train all healthcare staff in the skills necessary to implement this policy.

Areas of knowledge to emphasize:

- Explain the advantages of breastfeeding.
- Explain the risks of artificial or mixed feeding.
- Explain the mechanisms of lactation and suckling.

- Show how to help mothers initiate and sustain breastfeeding.
- Show how to carry out a breastfeed.
- Explain how to resolve breastfeeding difficulties.
- Describe hospital breastfeeding policies and practices.

Step 3: Inform all pregnant women about the benefits of breastfeeding.

What should prenatal education include?

- It should emphasize the importance of exclusive breastfeeding.
- It should explain the risks of artificial feeding and use of bottles and pacifiers, soothers, teats and nipples.
- It should not include group education on formula preparation.

Step 4: Help mothers initiate breastfeeding within half an hour of birth.

Why should we initiate early feeding for the newborn?

- It increases the overall duration of breastfeeding.
- It allows skin-to-skin contact for warmth and bonding of the infant with the mother.
- It provides colostrum for the infant's first immunization. (See "stages of lactation" for definition of colostrum.)
- It takes advantage of the first hour of alertness.
- The infant learns to suckle more effectively.

Step 5: Show mothers how to breastfeed and how to maintain lactation even if they are separated from their infants.

- Milk removal stimulates increased production. The more a child breastfeeds, the more milk is produced.
- The amount of breastmilk removed at each feed determines the rate at which milk will be produced in the next few hours.
- Milk removal must be continued during separation to maintain supply.

Step 6: Give *newborns* no food or drink other than breastmilk *unless medically indicated*.

What is the impact of giving the infant other foods and liquids?

- It decreases the frequency or efficiency of suckling.
- It decreases the amount of milk removed from the breast.
- It delays milk production or reduces the milk supply from the breast.
- Some infants have difficulty attaching to the breast if they receive formula by bottle.

Medically indicated exceptions for breastfeeding are instances in which the infant may require other fluids or food in addition to, or in place of, breastmilk. The feeding programme of these babies should be determined by qualified professionals on an individual basis.

Step 7: Rooming in: A hospital arrangement where the mother and infant stay in the same room day and night. This allows unlimited contact between mother and infant.

Why should babies room in?

- It reduces costs.
- It requires minimum equipment.
- It requires no additional personnel.
- It reduces infection.
- It helps establish and maintain breastfeeding.

- It facilitates the bonding process.

Step 8: Encourage breastfeeding on-demand.

What is breastfeeding on-demand?

- Breastfeeding on-demand means breastfeeding whenever the infant wants, with no restrictions on the length or frequency of breastfeeds.

Why on-demand breastfeeding?

- It minimizes weight loss in the first few days of life.
- Breastmilk flow is established sooner.
- The volume of milk intake by day 3 is larger.
- It lowers the incidence of jaundice in the newborn.

Step 9: Give no artificial feeds or pacifiers (also called dummies and soothers) to breastfeeding babies.

- Pacifiers act as artificial nipples and may cause confusion causing the infant to suck less effectively at the breast.
- Pacifiers decrease the amount of time a infant spends at the breast and this may affect the mother's milk supply.
- Pacifiers are difficult to clean properly and can carry infection.

Step 10: Foster the establishment of breast feeding support groups and refer mothers to them on discharge from hospitals and clinics.

What do we mean by breastfeeding support? Examples:

- Early postpartum or clinical check-up
- Home visits by community health workers
- Telephone calls
- Peer counselling programmes
- Mother support groups—help set up new groups and establish a working relationship with existing groups
- Family support systems

MTCT of HIV and Breastfeeding

Antiretroviral (ARV) treatment and prophylaxis greatly reduce mother-to-child transmission (MTCT) of HIV. ARV prophylaxis, however, does not provide long-term protection for the infant who is breastfeeding. Researchers are studying whether long-term antiretroviral treatment for the mother protects the infant from HIV infection through breastfeeding.

If no actions are taken, 5 to 20% of infants breastfed by HIV-infected mothers may become HIV-infected through breastfeeding. Infant-feeding practices that carefully follow national or UN guidelines can reduce the likelihood of MTCT through breastfeeding. Following these practices also reduces the risk of infant death from diarrhoea and other childhood infections.

There are certain risk factors that increase the likelihood of MTCT through breastfeeding. They include:

- High viral load in the mother
 - Recent HIV infection
 - Advanced HIV infection (AIDS)
- Mastitis
- Cracked or bleeding nipples
- Breast abscesses
- Candida
- Ulcers or sores in the infant's mouth
- Mixed feeding

Infant-feeding guidelines for mothers who *are HIV-infected*

Tanzania’s guidelines for HIV-infected women are to exclusively breastfeed for the first 6 months of life unless there is access to acceptable, feasible, affordable, sustainable and safe replacement feeding options.

Exclusive breastfeeding is recommended for HIV-infected women for the first 6 months of life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS—see “Definitions” below) for them and their infants.

At six months, if replacement feeding is still not acceptable, feasible, affordable, sustainable and safe, continuation of breastfeeding with additional complementary foods is recommended, while the mother and baby continue to be regularly assessed. All breastfeeding should stop once a nutritionally adequate and safe diet without breast milk can be provided.

The most appropriate infant feeding option for an HIV-infected mother should continue to depend on her individual circumstances, including her health status and the local situation, but should take greater consideration of the health services available and the counselling and support she is likely to receive.

All mothers who are HIV-infected should receive infant-feeding counselling. This counselling should include general information about the risks and benefits of infant-feeding options and specific guidance on selecting the best option for their situation. Whatever choice a mother makes, she should be supported.

Definitions

Acceptable: The mother perceives no significant barrier(s) to choosing a feeding option for cultural or social reasons or for fear of stigma and discrimination.

Feasible: The mother (or other family member) has adequate time, knowledge, skills and other resources to prepare feeds and to feed the infant as well as the support to cope with family, community and social pressures.

Affordable: The mother and family, with available community and/or health system support, can pay for the costs of the replacement feeds—including all ingredients, fuel and clean water—without compromising the family’s health and nutrition spending.

Sustainable: The mother has access to a continuous and uninterrupted supply of all ingredients and products needed to implement the feeding option safely for as long as the infant needs it.

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.

Source: Joint policy statement on HIV and infant feeding: WHO, UNICEF, UNAIDS Statement on Current Status of WHO/UNAIDS/UNICEF Policy Guidelines. Geneva, September 1999.

Risks associated with mixed feeding before 6 months of age

Mixed feeding is the feeding of both breastmilk and other foods or liquids. Many mothers introduce foods and liquids to very young infants (three-months old or younger) because they are worried that their infants are not receiving enough water or nutrients.

Risks associated with mixed feeding before 6 months of age:

- Mixed feeding increases the risk of HIV transmission to the infant.
- Mixed feeding causes irritation of intestinal mucosa, which is thought to permit easier access to the HIV virus.
- Mixed feeding replaces breastmilk with less nutritious food.
- Mixed feeding increases the risk of diarrhoea in infants.

Exclusively breastfed babies have fewer episodes of bacterial infection compared to mixed-fed babies.

It is essential that HCWs emphasize the importance of *exclusive* breastfeeding for HIV-infected mothers who choose to breastfeed. Even vitamin or mineral supplements should only be provided when medically appropriate. Women who choose to breastfeed will need additional counselling in order to avoid mixed feeding when they transition to replacement feeding.

Exercise 6.1 Strategies for optimal infant feeding: Large-group discussion	
Purpose	To identify local infant-feeding practices and discuss how national HIV infant-feeding guidelines are implemented.
Duration	15 minutes
Instructions	<ul style="list-style-type: none"> ▪ The trainer will lead a discussion on examples of questions that can be asked of clients to ensure that the following conditions are being met: <ul style="list-style-type: none"> ▪ Acceptable ▪ Feasible ▪ Affordable ▪ Sustainable ▪ Safe ▪ The following questions on infant-feeding choices will be addressed in a group discussion. Consider the mothers you have met in your work. <ol style="list-style-type: none"> 1. Would these mothers be able to replacement feed their infants based on these conditions? Why or why not? 2. How many participants have children? When did they start feeding their children foods other than breastmilk? What influenced this choice? 3. What influences a mother's infant-feeding choice? 4. What are some cultural or traditional beliefs in Tanzania about infant feeding? 5. What are some barriers to exclusive breastfeeding? ▪ Consider the following questions in discussion of other influences in the infant-feeding decision making: <ol style="list-style-type: none"> 6. How do cultural beliefs influence infant-feeding practices? 7. Who, other than the mother, is involved in making infant-feeding decisions? 8. How does a family's economic or financial status affect infant-feeding options? 9. What other barriers are there to optimal infant-feeding practices?

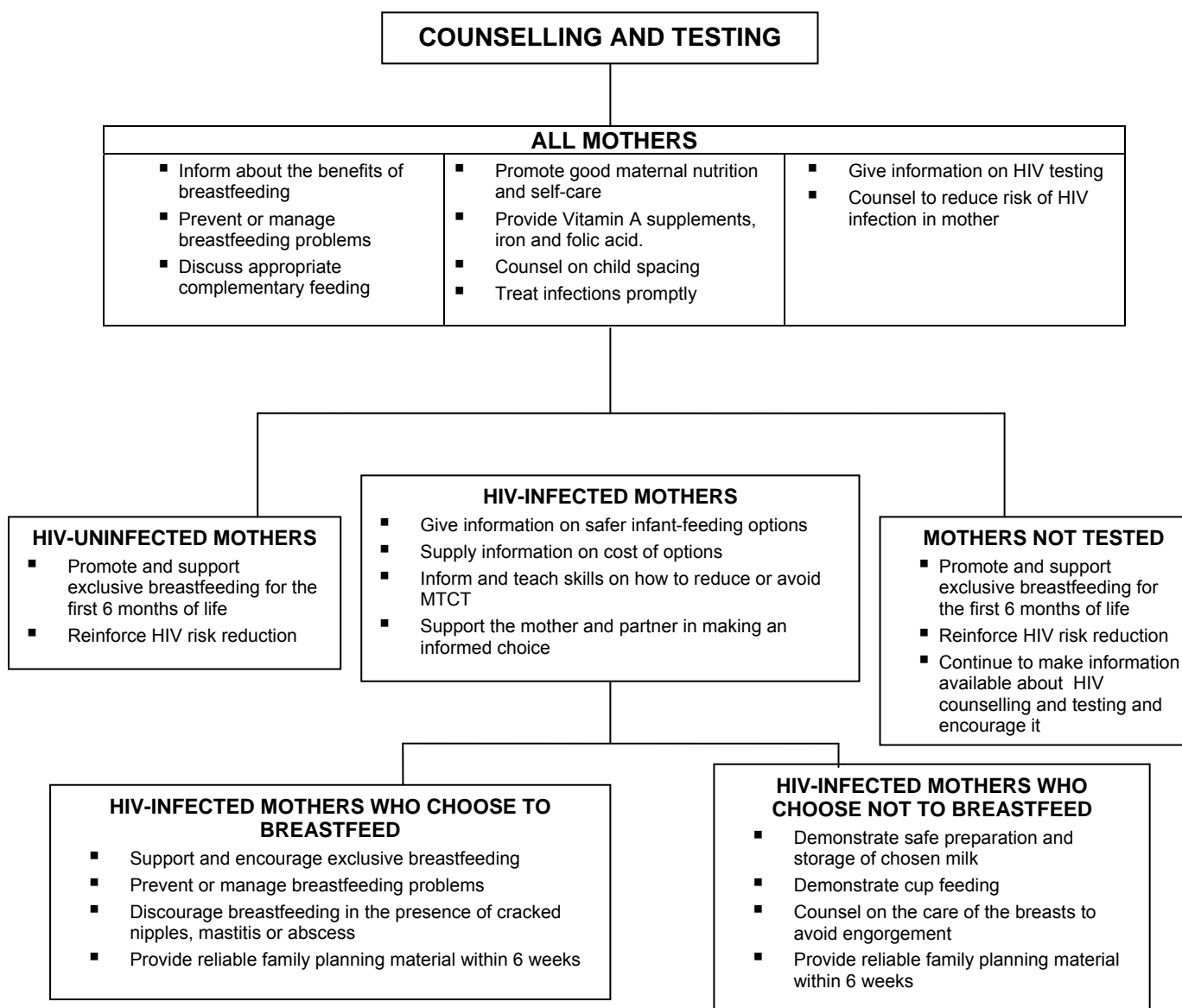
AFASS	Possible Questions for HCWs to Ask Clients
Acceptable	What will the client's partner or husband think if she does not breastfeed?

	Her mother-in-law? Other family members? Community members? What do people say when a baby is not breastfed? Will people guess that a non-breastfeeding mother has HIV?
Feasible	Does the client work? If yes, are there other caregivers that will be able to prepare the replacement feeds and feed the baby as often as is needed? Will other caregivers know the mother's HIV status? Will they receive infant-feeding counselling? Will all caregivers be able to measure and prepare the feeds correctly?
Affordable	Will the client buy replacement feed or will someone provide it? How will she budget for it?
Sustainable	Is the supply of replacement feeds consistent? Do the markets or shops in her area tend to run out of animal milk or formula? Does the client have enough money and family support to replacement feed the infant for a year or longer?
Safe	Where does the woman live? How easily and consistently is clean water available? Is there a reliable fuel source for boiling water? Where is the toilet facility? Is it shared? What is the risk for diarrhoeal illness in her community? Is her source of animal milk trustworthy? Can she be sure that the milk that she buys will not have been previously diluted?
<p>Examples of infant-feeding beliefs and practices ALL of these practices are incorrect and should be discouraged.</p> <ul style="list-style-type: none"> ▪ Because early milk or colostrum looks different than transitional milk or mature milk, it is bad for the baby and should be thrown away. ▪ Babies need extra water because the climate is so hot. ▪ Babies should be given something sweet and something sour to taste so they know that life will hold good and bad things. ▪ Long-term breastfeeding will make a woman's breasts sag and therefore she should avoid breastfeeding. ▪ Mothers start giving babies food after the traditional 40 days of seclusion. 	

Guidance and support for implementing infant-feeding guidelines

- Provide all mothers who are HIV-infected with infant-feeding counselling. This counselling should include general information about the advantages and disadvantages of various infant-feeding options as well as specific guidance for selecting the option most suitable for their situations.
- Support the mother's choice, whichever feeding option she chooses.
- Find out what feeding options are acceptable, feasible, affordable, sustainable and safe in your community.
- Develop information and education about MTCT, including facts about transmission through breastfeeding. Target this material to the public, affected communities and families.
- Partner with programs that give infant-feeding health outreach to the community using trained lay or peer counsellors.

Figure 6.1: HIV and infant-feeding practices guidelines



UNIT 2 Infant-Feeding Options

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Identify the advantages and disadvantages of the main infant-feeding options for women with HIV.

Infant-feeding Options for HIV-Infected Women

Making decisions about infant feeding

HIV-infected mothers must consider many things when deciding which feeding option is best for their infants. HCWs can facilitate their decision-making by providing infant-feeding counselling that includes the following:

- Information about the risk of HIV transmission through breastfeeding
- Information on the advantages and disadvantages of each available option, including cost
- Respect for local customs, practices and beliefs when helping a mother make infant-feeding choices

HCWs share in the responsibility to protect, promote and support safe and appropriate feeding practices. They should support women's infant-feeding decisions and refer them to trained infant-feeding counsellors for continued support during the first two years of a child's growth and development.

An HIV-infected pregnant or newly delivered woman will have to make an infant-feeding decision among the locally appropriate options available.

Once a woman selects an infant-feeding option, she will need ongoing support from HCWs to maximize success and insure proper growth and development of the child.

There are two main infant-feeding options that a mother can choose:

1. Breastmilk feeding
2. Replacement feeding

Each of these two main options contains a number of sub-options.

1. Breastmilk feeding options

Mothers who choose to breastfeed should be made aware that:

- From 5 to 20% of infants breastfed by HIV-infected mothers may acquire HIV infection through breastfeeding.
- ARV prophylaxis provided during labour and to the infant shortly after birth does not provide long-term protection for the infant who is breastfeeding.
- The risk of transmitting HIV to the infant during breastfeeding is greater:
 - When the woman has a higher viral load (by clinical or laboratory measures)
 - When she has mastitis, breast abscess, or other similar conditions
 - When the child has ulcers or open sores in the mouth

1a: Exclusive breastfeeding for the first 6 months

Advantages and disadvantages of exclusive breastfeeding are presented in Table 6.1.

Table 6.1 Exclusive breastfeeding**Advantages**

- Breastmilk is easily digestible and gives infants all the nutrients and water they need. They do not need any other liquid or food for the first 6 months.
- Breastmilk is very gentle and does not irritate an infant's sensitive stomach and intestines.
- Breastmilk is always available and does not need any special preparation.
- Breastmilk protects infants and children from diseases, particularly diarrhoeal diseases and pneumonia.
- Breastfeeding improves brain growth and development.
- Breastfeeding provides close contact that deepens the emotional relationship or bond between mother and child.
- Compared to mixed feeding, exclusive breastfeeding may have a lower risk of transmitting HIV to the infant.
- Breastfeeding reduces mother's risk of some cancers and helps space her pregnancies.

Disadvantages

- The risk of MTCT exists as long as the mother who is HIV-infected breastfeeds because breastfeeding exposes the infant to HIV.
- The risk of transmitting HIV through breastfeeding is increased if the mother has a breast infection (e.g., mastitis) or cracked and bleeding nipples.
- Family, friends, or neighbours may pressure mothers to give water, other liquids, or foods to the infant. This practice, known as mixed feeding, may increase the risk of diarrhoea, HIV transmission and other infections.
- Exclusive breastfeeding requires feeding on demand at least 8–10 times per day, which working mothers may find difficult if they lack adequate support (alternatively, they can privately express milk during the workday and can arrange to store milk in a cool place).
- Mothers breastfeeding exclusively require an additional 500 kcal/day during the infant's first 6 months. This is the equivalent of one extra meal a day.

1b: Exclusive breastfeeding with early cessation (weaning)

The national recommendation is for HIV-infected women who chose to breastfeed to do so for the first 6 months of the infant's life, after which time complementary foods should be added to an infant's diet. After 6 months, the recommendation is to continue to breastfeed until replacement feeding is AFASS for mothers and their infants. If replacement feeding does not meet these criteria, women should continue to breastfeed.

Weaning the child from breastmilk and starting replacement feeding may take a few days to two weeks. Before starting to wean the infant, mothers who are HIV-infected should receive psychosocial support, infant nutrition information, as well as support and guidance needed to maintain breast health.

Breastfeeding should not be stopped early for infants who are *already infected with HIV*. If the infant is diagnosed with HIV infection based on his signs and symptoms or HIV testing, the mother should be encouraged to continue exclusive breastfeeding.

The infant will continue to need other milk after six months along with other appropriate foods.

The advantages and disadvantages of exclusive breastfeeding with early weaning are presented in Table 6.2. More information on steps to follow when weaning are provided in Unit 3 of this module.

Table 6.2 Exclusive breastfeeding with cessation at six months**Advantages**

- Weaning at six months ends the infant's exposure to HIV through breastfeeding.

Disadvantages

- Infants may become malnourished after breastfeeding stops if suitable breastmilk substitutes are unavailable or are provided inappropriately.
- Infants may be at increased risk of diarrhoea if breastmilk substitutes are not prepared safely.
- Replacement feeding will require feeding the infant with a cup. Cup feeding requires caregiver patience and time. (See Appendix 6-G for a summary of the advantages of cup feeding and practical suggestions for cup feeding an infant.)
- Infants may become anxious and even dehydrated if they stop breastfeeding too rapidly.
- Mothers' breasts may become engorged and infected during the transition period if some milk is not expressed and discarded.

1c: Expressing and pasteurising breastmilk

Pasteurizing breastmilk by heating it to the boiling point kills the HIV in the breastmilk. Expressing and pasteurizing breastmilk is a short-term strategy that is recommended for HIV-infected women to reduce the risk of HIV transmission through breastmilk while they are ill or while they are experiencing breast problems that increase transmission risk. Expressing and pasteurizing breastmilk can also be used to avoid mixed-feeding during weaning. It is not recommended as a long-term breastfeeding strategy because it is difficult for women to do.

Expressing and pasteurizing breastmilk has many of the advantages of exclusive breastfeeding. In addition, the HIV virus is killed by heating the milk. Expressing breastmilk also allows other responsible family members to help feed the infant.

However expressing and pasteurizing breastmilk has many disadvantages that prevent it from being a long-term feeding option for HIV-infected women.

Disadvantages of expressing and pasteurizing breastmilk

- Pasteurized breastmilk may not be as effective as unheated breastmilk in protecting the infant from other diseases; however, its use is still better than replacement feeding.
- Expressing and heating breastmilk takes time and must be done frequently.
- The infant will need to drink from a cup, which may take time to learn.
- The breastmilk needs to be stored in a cool place and used within one hour of heating.
- Families will need fuel to heat the milk and clean boiled water to wash the infant's cup and the container used to store the breastmilk.
- People may wonder why the mother is expressing her milk.

2. Replacement feeding during the first 6 months of life

Replacement feeding means feeding infants, who are receiving *no breastmilk*, with a diet that provides most of the nutrients that they need until the age at which they can be fully fed on family foods. Replacement feeding should only be considered when it is acceptable, feasible, affordable, sustainable and safe and when it meets the individual needs of the mother. Unlike breastfeeding, it does not provide immune protection against other diseases.

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

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

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

Cup feeding is recommended over bottle feeding (Refer to *Appendix 6-G.*)

2a: Commercial infant formula

Advantages and disadvantages of commercial infant formulas are presented in Table 6.3. Table 6.4 summarizes how many tins of commercial infant formula are required to feed infants each month.

Table 6.3 Commercial infant formula

Advantages

- Commercial formula poses no risk of transmitting HIV to the infant.
- Commercial formula is made especially for infants.
- Commercial formula includes most of the nutrients that an infant needs.
- Other family members can help feed the infant.

Disadvantages

- Commercial formula does not contain antibodies, which protect infants from infection. An infant who is fed commercial formula exclusively is more likely to get diarrhoea and pneumonia and may develop malnutrition.
- A continuous, reliable formula supply is required to prevent malnutrition.
- Commercial formula is expensive.
- Families need soap for cleaning cups and utensils used in preparing the formula.
- Safer preparation of commercial formula requires clean water that has been boiled; this requires fuel, which is expensive.
- Safer preparation of formula also requires careful measurement.
- Formula should be made fresh for each feed, according to directions, day and night, unless there is access to a refrigerator.
- The infant needs to drink from a cup, which may take time to learn. (See Appendix 6-G.)
- The mother must stop breastfeeding completely, or she will continue to risk transmitting HIV to her infant. (Mixed feeding carries higher risk of HIV transmission than exclusive breastfeeding).
- In some settings, family, neighbours, or friends may question a mother who does not breastfeed about her HIV status. (See Unit 3 of this module.)
- Procuring, preparing and storing commercial formula feeds can be complex

Table 6.4 Commercial infant formula requirements in first 6 months

Month	400 g Tins/Month	500 g Tins/Month
0-1	5	4
2	6	6
3	8	7

Table 6.4 Commercial infant formula requirements in first 6 months		
Month	400 g Tins/Month	500 g Tins/Month
4	8	7
5	8	8
6	9	8
Total	44	40

2b: Home-modified animal milk

Home-modified animal milk is animal milk that is diluted and fortified to make it more nutritionally suitable for infants. Modifications include diluting the milk with boiled water in precise amounts to reduce the formula's concentration and adding sugar to increase the number of calories in the milk. *Babies receiving animal milk also require daily micronutrient supplements to help prevent anaemia and other forms of malnutrition.*

The required dilution amount varies for different animal milks (details on how to modify animal milk are provided in the next unit). Milk does not have to be diluted for infants 6 months and older. From 6 months, the child should also be receiving nutritious complementary foods.

Infants require about 15 litres of modified animal milk formula per month for the first 6 months. The milk formula may be prepared at home using fresh animal milks, dried milk powder, or evaporated milk.

Suitable and unsuitable milks

Not all milks are suitable for use in home-modified animal milk.

The following milks are suitable for home-modified animal milk:

- Fresh (full-cream or whole) cow milk
- Full-cream or whole dried milk powder
- Evaporated milk
- Ultra-heat treated (UHT) milk

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

- Fresh animal milk already diluted by an unknown amount
- Skimmed milk or low-fat milk powder
- Sweetened or condensed milk
- Thin cereal-based gruels or porridge
- Fruit juice, teas, sugar drinks or sodas
- Flavoured milk drinks or coconut milk

It is important to observe strict hygiene in preparing the milk. Mothers must be sure that the milk they buy has not been previously diluted.

Safe storage of the home-modified animal milk is also essential for preserving its nutritional value and minimizing the risk of malnutrition.

Home-modified animal milk should only be considered as an option when commercial formula is not available or affordable.

Infants who are fed home-modified animal milk formulas require micronutrient supplements because animal milks are relatively low in iron, zinc, vitamin A, vitamin C and folic acid.

Table 6.5 Home-modified animal milk**Advantages**

- 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.

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 breastmilk.
- 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, multi-nutrient 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. (See Appendix 6-G.)
- In some settings, a mother who does not breastfeed may be questioned about her HIV status by family, neighbours, or friends.

UNIT 3 Supportive Counselling for Safer Infant-Feeding Choices

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Provide an overview of infant-feeding counselling for women, both HIV-infected and uninfected.
- Explain the importance of the postpartum follow-up and support required for appropriate and safe infant feeding.
- Identify and describe the management of breast-related conditions.
- Demonstrate the safe preparation of commercial formula and home-modified feeds.
- Discuss the introduction and support of complementary feeding for children 6 to 24 months.

Introduction to infant-feeding information

During the antenatal and postpartum periods, all women (or couples), regardless of HIV status, should be provided with information on safer breastfeeding practices as well as general health education. This service enables the mother or a couple to make an informed decision about infant feeding and can protect children from health risks associated with inappropriate feeding.

HIV-infected women have to make complex infant-feeding decisions. If they do not breastfeed, they risk exposing their infants to illness and death from poor replacement feeding practices. If they breastfeed, they risk transmitting HIV to their infants. Parents must make infant-feeding decisions based upon their unique circumstances. Tanzania's national PMTCT guidelines promote the right of parents to choose how and what to feed their infants after being given information on different infant-feeding options.

Additional training in infant-feeding counselling and support

Infant-feeding counselling for HIV-infected women is central to PMTCT. HCWs who counsel women need many specific skills. There is a five-day, MOHSW/UNICEF/WHO integrated infant and young child feeding counselling course that HCWs who will be giving infant-feeding counselling should consider taking to improve their skills. The MOHSW has also adapted the UNICEF and WHO counselling cards to help HCWs counsel clients on HIV and infant feeding.

Counselling about infant feeding

A woman who is HIV-infected should receive counselling that includes:

- Information about the risk of HIV transmission through breastfeeding
- Information on advantages and disadvantages of various feeding options
- Guidelines for feeding based on the woman's individual circumstances, including her health, social and financial status, as well as local customs and beliefs
- Instruction on the skills needed to feed her infant safely, including demonstrations and/or opportunities for practice
- Encouragement for partner or family involvement in infant-feeding decisions, when safe and appropriate

- Support for disclosure of her HIV status to loved ones
- Guidance during both the antenatal and postpartum periods

Infant-Feeding Counselling visits

All mothers, regardless of HIV status, benefit from infant-feeding counselling. Infant-feeding counselling should take place during:

- **Antenatal Care:** At least one counselling session should take place during the antenatal period. Mothers who are HIV-infected should receive infant-feeding counselling over the course of several sessions. If possible, the infant-feeding counselling should be provided some time after post-test counselling, but not immediately after the mother learns her test results. If a mother is unlikely to return to ANC, provide her with all of the essential infant-feeding information during the first visit.
- **Postnatal Care:** A HCW should ideally visit the mother and infant immediately after the birth (either in the maternity ward or at home) and schedule another visit within seven days to monitor infant-feeding progress. Most women in Tanzania deliver their infants at home. This poses an additional challenge for the HCW to be able to provide timely follow-up counselling. HCWs should schedule follow-up infant feeding counselling sessions for times when the mother brings the child to the clinic for well-baby care or immunizations. Additional counselling sessions may be required when the:
 - Child is sick
 - Mother returns to work
 - Mother decides to change feeding methods

When possible, infant-feeding counselling for HIV-infected women should occur in a private, one-on-one session, particularly if the woman is replacement feeding her child. It is important that other women in the healthcare setting are not encouraged to replacement feed their children. If infant-feeding counselling is usually given in a group setting, the HCW may have to incorporate infant-feeding counselling into the woman's private exam or schedule a special private session to talk to her.

Infant-feeding counselling steps for women who are HIV-infected

The flowchart in Figure 6.2 illustrates six steps for counselling mothers infected with HIV about infant feeding. Use the flowchart on the following page.

If this is the mother's first infant-feeding counselling session and...*She is early in her pregnancy:*

- Do Steps 1–4.
- Ask her to return in her third trimester to learn how to implement the feeding method (Step 5).

She is late in her pregnancy:

- Do Steps 1–5.

She already has a child and is breastfeeding or mixed feeding:

- Do relevant parts of Steps 1–5.

She already has a child and is using only replacement feeding:

- Do relevant parts of Step 5 and Step 6.

If the mother has already been counselled and chosen a feeding option and...*She is still pregnant or newly delivered, but has not yet been counselled on how to succeed in her selected feeding method:*

- Begin with relevant parts of Step 5.

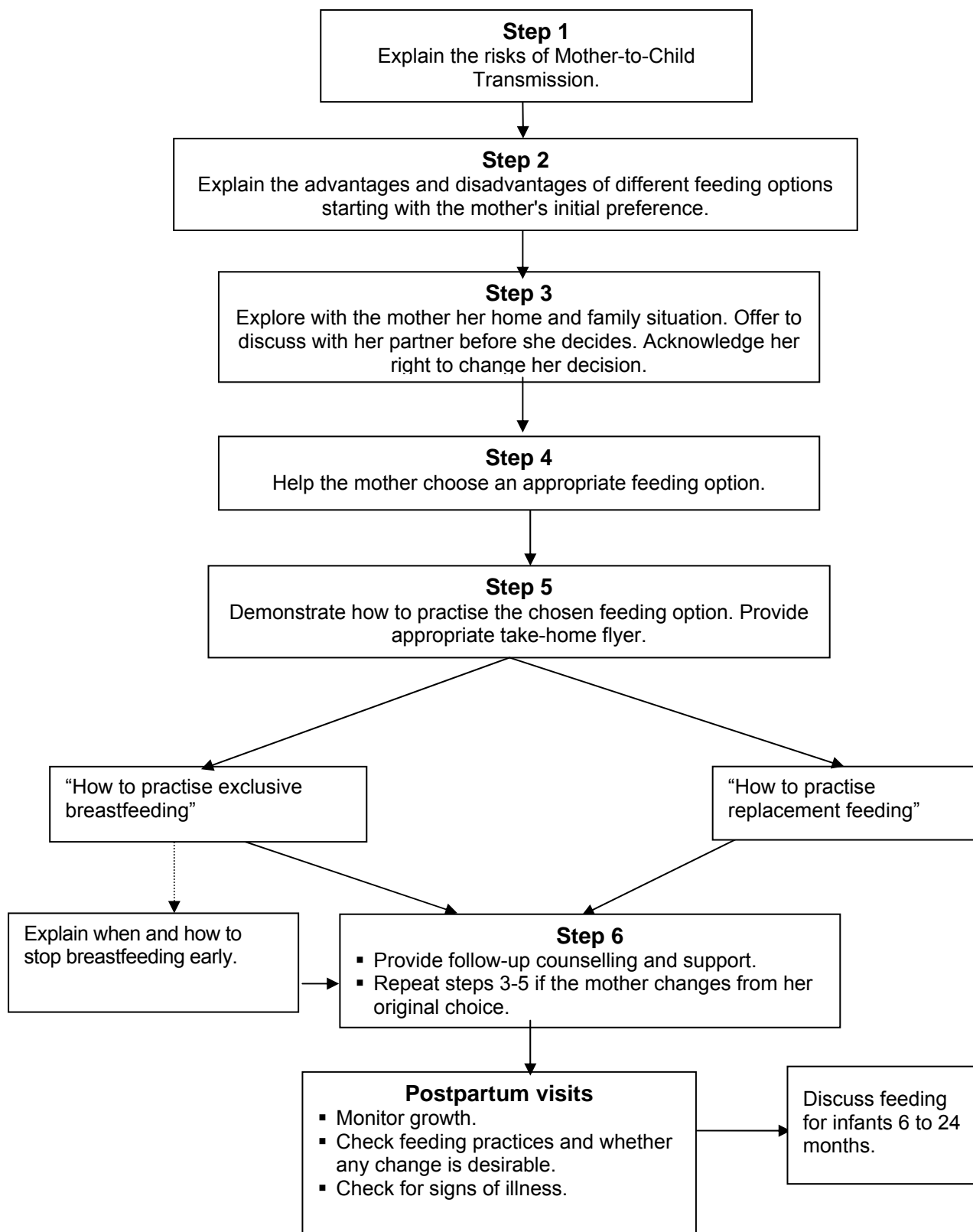
If she already has a child:

- Begin with Step 6.

If this is a follow-up visit...

- Begin with Step 6.

**Figure 6.2 Infant- feeding counselling for women who are HIV-infected
Counselling Flowchart**



Basics facts about breastfeeding

Exclusive breastfeeding can be challenging. All mothers require education and support to help ensure a successful breastfeeding experience. Helping the mother understand the stages of lactation and the composition of breastmilk can help her appreciate the process of breastfeeding.

Duration of the feed

The average length of a breastfeeding session should be about 20-30 minutes to allow the infant to get enough milk. During breastfeeding, *foremilk* is produced at the beginning of a feed. Foremilk contains important proteins, vitamins and minerals. *Hind milk* is produced at the end of the feed; it contains the fat that helps babies gain weight.

Mothers should breastfeed the child whenever the child seems hungry (breastfeed on demand). The more the infant suckles, the more breastmilk will be produced.

It is important for the breastfeeding mother to empty each breast to ensure that her infant is benefiting from the hind milk. Emptying the breast will also prevent breast engorgement.

Stages of lactation

Many women believe that colostrum is bad for the infant. They express it and throw it away. When counselling breastfeeding women it is important to let them know that early breastmilk is nutritious and that breastmilk changes to meet the needs of the infant as it grows. There are three kinds of breastmilk: early milk, transitional milk and mature milk.

Early milk or colostrum

Colostrum is a thick, yellowish milk that is produced by a woman's breast in the first days after delivery. It has high levels of calcium, potassium, proteins, fat-soluble vitamins, micronutrients and antibodies, which are critical to an infant's immune system. Colostrum also contains digestive enzymes and can help the passage of meconium and reduce the risk of jaundice.

Transitional milk

Transitional milk is produced between day 4 and 10. It is an intermediary between colostrum and mature milk. Transitional milk contains more water and less protein.

Mature milk

Mature milk is produced from approximately day 10 after delivery until the end of breastfeeding. Mature milk contains whey protein, which is easily digested, fat, digestive enzymes, carbohydrate, minerals and antibodies. In addition, mature milk has hormones, prostaglandins and growth factors that can benefit the infant.

Gestational age at birth

The composition of breastmilk changes according to an infant's needs. Breastmilk produced by a mother who has delivered a pre-term infant typically has more protein and fat.

Good breastfeeding technique

All mothers who choose to breastfeed need to prepare themselves during pregnancy for successful breastfeeding. The antenatal clinic setting is an excellent place for women to get information and learn skills on effective breastfeeding.

Breast problems such as mastitis, cracked nipples and breast abscesses facilitate HIV transmission from mother to child through breastmilk. Instruction in good breastfeeding technique, including correct positioning and attachment can help avoid pain and damage to the nipples, engorgement and a poor milk supply.

It is important to teach mothers proper breastfeeding techniques, which include:

- **Correct positioning**
Types of positions include: cradle hold, clutch hold (most common position with twins), side lying or sleeping position.
 - Infant's whole body should be held close and face the mother
 - Infant's arms should not be wedged between the infant and mother's body
 - Infant's head and body should be in a straight line
 - Infant's bottom should be supported and not resting on her lap
 - Infant's head should face the breast
 - Infant's face should be close to the breast with the tip of the nose opposite the nipple
 - Infant's chin should touch the breast

- **Good attachment of the infant to the breast**
The features of an infant who is well-attached on the breast are:
 - Infant's mouth wide open
 - Infant's lower lip turned out
 - Infant's chin touching the breast
 - More of the areola visible above the infant's mouth than below
 - Infant makes slow deep sucks, sometimes pausing
 - You may hear deep swallowing gulps
 - The baby should not be making deep smacking sounds
 - Milk flows well

- **Feeding on demand—emptying the breast**
 - Exclusive breastfeeding requires feeding on demand.
 - Frequent feedings can reduce the risk of HIV transmission considerably by preventing mastitis and breast abscesses.
 - Each breast should be fully emptied to prevent breast problems.

Refer to Appendix 6-D: *Good Breastfeeding Technique*, which provides illustrations of good breastfeeding techniques. Refer also to Appendix 6-H, *HIV and Safer Infant-feeding: Basic Concepts*.

Identification and Management of Breast Conditions

This section considers common breast conditions. Assessment and treatment of opportunistic infections related to breast conditions are taken up in *Module 7: Comprehensive Care and Support for Pregnant Women, Mothers and Families with HIV Infection*.

Engorgement

Full breasts that become engorged are painful and swollen, making it difficult for the infant to latch correctly. Should breasts become engorged, HCWs should counsel women to manage the problem as follows:

- Pump or manually express some breastmilk to reduce engorgement
- Support the breasts but avoid binding
- Alternate warm showers and cold and warm compresses for pain relief
- Relieve pain with paracetamol
- For ongoing prevention, consider increasing the number 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 managing and preventing sore nipples include the following:

- Check positioning and encourage the infant to open his 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 a HCW assess cracked nipples for candida and treat, if necessary.

Blocked ducts

Milk flows through a duct system in the mother's breasts. Sometimes an area of the ducts becomes blocked and milk no longer flows as well. Blocked ducts are often the result of inconsistent feeding or incomplete emptying of the hind milk. Management includes these steps:

- Offer the affected breast first to ensure strong suckling
- Gently massage lump towards the nipple
- Use warm compresses and showers, nursing immediately after

Mastitis

Mastitis is an inflammation of the breast tissue surrounding the milk ducts, usually caused by blocked ducts or unresolved engorgement. It can also be caused by bacteria entering a cracked nipple.

Signs and symptoms of mastitis include:

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

HIV-infected women with mastitis may have increased levels of HIV in their breastmilk and may therefore be at higher risk of transmitting HIV to their infants through breastfeeding. Women with mastitis should avoid breastfeeding from the affected breast while mastitis is present. They should express and discard the milk frequently from the affected breast(s) to prevent the mastitis from becoming worse, to help the breast(s) recover and to maintain milk production.

- If only one breast is affected, the woman may continue to breastfeed from the healthy breast.
- If the milk from the healthy breast is not enough to cover the infant's needs, the woman may express and pasteurize milk from the affected breast and give it to the infant. (See *Appendix 6-E* for directions on how to pasteurize breastmilk.)
- If both breasts are affected, the woman should consider stopping breastfeeding (while expressing breastmilk frequently) until the mastitis is healed. The counsellor should help her choose an alternative feeding method for this period.

CARESS model for management of mastitis:

- C** – Compresses (hot and cold)
- A** – Antibiotics (if necessary)
- R** – Rest
- E** – Effective, gentle and frequent removal of breastmilk
- S** – Stress identification and management
- S** – Support and follow-up

Prevention and early management of breast conditions can ensure a more successful breastfeeding experience, help promote exclusive breastfeeding and decrease the risk of MTCT.

Stopping breastfeeding early, followed by replacement feeding

Mothers should *only* attempt to stop breastfeeding when AFASS conditions can be met. Mothers who plan to stop breastfeeding early should understand how to safely prepare replacement feeds and should have a detailed plan in place for obtaining the necessary supplies.

The transition period between breastfeeding and replacement feeding should be kept as short as possible. It is important to avoid mixed feeding during the transition, as this might increase the risk of HIV transmission. To support a safe transition, HCWs should counsel mothers to follow these steps:

- Mothers should introduce cup feeding of breastmilk *prior* to stopping breastfeeding in order to ensure that the infant adapts to cup feeding.
 - Before the mother stops breastfeeding, she should try expressing and cup feeding breastmilk.
 - She should do this a when the infant is not very hungry to avoid frustrating the infant.
 - She can pasteurize this milk if she wishes to kill HIV.
- Every few days, the mother should increase the frequency of cup feeding and reduce the frequency of breastfeeding.
- The mother should stop putting the infant to the breast completely as soon as she and her infant are accustomed to frequent cup feeding. From this point on, it is best for her to pasteurize her breastmilk to prevent mixed feeding as she transitions to replacement feeding.
- The mother should check that her infant is passing enough urine – at least 6 wet diapers in every 24-hour period. This means that the infant is getting enough milk.
- The mother should gradually replace the expressed, pasteurized breastmilk with commercial infant formula or home-modified animal milk.
- If the infant needs to suck, the mother should give him/her a clean finger instead of the breast.
- The mother should express enough milk to keep her breasts comfortable and healthy until her milk production stops.
- The mother can reduce breast discomfort by alternating warm and cold compresses to reduce swelling.
- Mothers should avoid using bottles or artificial teats to feed their infants. These are difficult to clean properly and are therefore easily contaminated with germs that can make an infant sick.

HCWs should acknowledge that the weaning period is a time where both infant and mother require additional support and comforting. Mothers should be advised to enlist the help of family members to feed the infant using the cup method. Mothers will need reassurance that they can meet the challenges of stopping breastfeeding and that the problems they may be having will not last long.

Exercise 6.2 Introducing good breastfeeding technique and maternal support: Role-play	
Purpose	To provide basic skills and instruction in good breastfeeding technique along with supportive counselling for the mother.
Duration	40 minutes
Instructions	<ul style="list-style-type: none"> ▪ Refer to Appendix 6-D on <i>Good Breastfeeding Technique</i>. ▪ Participants pair up with another participant. In each pair, one participant will play the role of the mother, the other the role of the HCW. If there are an odd number of participants, a third person will act as observer. The roles can alternate later in the exercise. ▪ Participants playing the role of HCWs can open the dialogue with the participant playing the role of the mother as follows: <ul style="list-style-type: none"> ▪ Begin with introductions ▪ Confirm choice of infant feeding and mother's understanding of advantages and disadvantages ▪ Determine the mother's prior infant-feeding experience ▪ Explore support available for the mother's infant-feeding choice ▪ Answer any questions or concerns she may have prior to starting the demonstration ▪ In a 15 minute demonstration and practice, each group HCW will demonstrate good breastfeeding techniques and guide each group mother in the practice of the breastfeeding technique. After each role is comfortable with the steps, the HCW should emphasize the following points: <ul style="list-style-type: none"> ▪ Using good breastfeeding technique will reduce problems such as cracked nipples or mastitis. ▪ Mothers should seek assistance early if they are having any problems. ▪ The trainer will lead a group debrief session.

Supporting the choice to replacement feed

How to empower, prepare and support non-breastfeeding women for questions they confront in the community

In Tanzania, women are often expected to breastfeed their infants for one year or longer. If the infant is not breastfed, or if breastfeeding is discontinued early, people may ask questions about the mother's HIV status.

Issues to consider in supporting non-breastfeeding women:

- Women do not make decisions about infant feeding on their own. They consult with other family members. This conversation is good because it builds family support for the mother's infant-feeding choice.
- The involvement of the woman's partner can help her feel more confident and comfortable with her infant-feeding choice. HCWs should help women learn the skills necessary to talk to their partners about PMTCT and should invite partners to attend antenatal appointments.
- Women and their partners should decide how they plan to feed their infant in the antenatal period. After this decision is made, the HCW should help prepare the woman to answer questions about her choice.

During counselling, HCWs should ask women and their partners specific questions about their infant-feeding choice, such as “What will you say when your mother-in-law or neighbour asks you why you are not breastfeeding or why you have stopped breastfeeding?” The HCW may help the woman and her partner prepare to answer these questions. Some culturally acceptable answers that the woman can give for not breastfeeding include saying that:

- She is working
- She is having “problems” with her breasts
- Her breastmilk is “bad”
- She is ill (without disclosing the precise illness)

The counselling session may also be an opportunity to discuss disclosure of the woman's HIV status to the family.

As PMTCT programmes expand, community education and mobilization activities should be developed to help HIV-infected women who choose not to breastfeed or to stop breastfeeding early. They should also help mothers who choose to exclusively breastfeed to maintain that choice.

The final decision about the infant-feeding option should be the woman's. She will need support for her chosen option and guidance any time she changes her feeding practice, including extra support for stopping breastfeeding early if she decides to do this.

Preparing Replacement Feeds

When a mother makes replacement feeds, whether from commercial formula or home-modified animal milk, it is very important that the milk and water are mixed in the correct amounts *consistently* and that sugar and micronutrients are added if needed. Small mistakes in the feed preparation may not have an immediate effect but may make an infant ill or malnourished if they are repeated. It is therefore important that HCWs know how to demonstrate preparation of commercial and home-modified animal milk infant formulas in their clinical settings.

Counselling for mothers who choose to replacement feed

Mothers who choose to replacement feed will need detailed instruction on how to prepare the formula correctly.

If possible, the woman should bring the containers that she usually uses for preparing food to an infant-feeding counselling session. The counsellor should demonstrate how to prepare formula with these containers and mark them to show how much water and milk will be needed to prepare formula.

General replacement feeding guidelines for the first 6 months of life

- Mothers should only prepare enough formula milk for one feed at a time because the formula needs to be used within one hour of preparation unless there is consistent refrigeration.
- The mother should be sure to wash her hands as well as all utensils, feeding cups and containers with soap and clean water before beginning to prepare formula.
- The formula milk should be fed to the infant as soon as it has cooled.
- Leftover formula milk should not be stored as it becomes contaminated easily. Mothers can give it to an older child, drink it themselves, or add it to cooked food.
- All water used for formula feeds should be boiled vigorously.

- Replacement feeds should be given from an open cup, not a bottle or a cup with a teat. This is because cups are easier to clean with soap and water than bottles and are therefore safer.
- An infant will not need any other food besides formula milk until he or she is 6 months old. An infant who is being fed formula milks should neither breastfeed nor be given any other food, water or other types of liquids except for multivitamins or medicines when indicated.
- Women who replacement feed, like all women, need information about family-planning as they lose the small protection that breastfeeding can afford against pregnancy.

Preparing *commercial infant formula* in the first 6 months of life

- Counsellors should review the instructions on the formula tin with the mother, making sure she understands them. The manufacturer's instructions for mixing the formula need to be followed exactly, except for cases where the tin has instructions to bottle-feed the infant.
- Boiled water used for the preparation of commercial infant formula must be brought to a rolling boil for 1-2 seconds. The hot boiled water should be added to the specified amount of powdered formula.
- 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.

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

Cow milk is the most readily available animal milk nationally. The milk fed to an infant 1-6 months old needs to be boiled, diluted and then fortified with sugar to increase the number of calories. The following are the proportions of dilution:

- 10 parts milk + 5 part water + 1 part sugar
- Boil the mixture for 1-2 seconds then let it cool before feeding the infant

The tables below provide instruction on the amount of milk needed for one feed.

Mothers should follow these steps when preparing cow milk for their infants

- Make enough formula for one feed at a time. Mothers may make formula for more than one feed if she can store it in a refrigerator and in a sterilized container with a tight lid.
- Wash hands with soap and clean water.
- Clean all of the utensils, containers and cups with soap and clean water.
- *For fresh animal milk*
 - Measure the amount of water, milk and sugar needed depending on the infant's age (See table 6.6). HCWs should mark the mother's containers to show the amount of liquid required for both milk and water.
 - Put the water and milk together in a small pot and bring them to a boil. As soon as they reach the boiling point, remove the pot from the heat and stand it in a larger pot of cool water to let it cool.
- *For powdered full-cream milk:*
 - Gather all of the water that you will need for the whole day if possible.
 - Bring the water to a rolling boil briefly (until the surface of the water is moving vigorously for a second or two). Mothers may keep it hot in a thermos flask.

- Mix the exact amount of powdered milk and water needed for one feed.
- Measure the exact amount of sugar needed for one feed and mix it with the liquid.
- Cup feed the infant the formula.
- Give the infant micronutrient supplements **every day**. If micronutrient supplements are not available, home-modified animal milk is not the best option for the mother.
- *Details on the quantity of micronutrients needed to supplement home-modified animal milk can be found in Appendix 6-F.*

Table 6.6: Cow's milk

Age of infant	Amount of milk	Amount of water	Amount of sugar
1 month	40 ml	20 ml	4 g (approx 1 level tsp.)
2 months	60 ml	30 ml	6 g (approx 1 rounded tsp.)
3 to 4 months	80 ml	40 ml	8 g (approx 1 heaping tsp.)
5 to 6 months	100 ml	50 ml	10 g (2 level tsp.)

Table 6.7: Evaporated milk*

Age of infant	Amount of milk	Amount of water	Amount of sugar
1 month	16 ml	44 ml	4 g (approx 1 level tsp.)
2 months	24 ml	66 ml	6 g (approx 1 rounded tsp.)
3 to 4 months	32 ml	88 ml	8 g (approx 1 heaping tsp.)
5 to 6 months	40 ml	110 ml	10 g (2 level tsp.)

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

Table 6.8: Powdered full-cream milk

Age of infant	Amount of milk	Amount of water	Amount of sugar
1 month	5 g	60 ml	4 g (approx 1 level tsp.)
2 months	7.5 g	90 ml	6 g (approx 1 rounded tsp.)
3 to 4 months	10 g	120 ml	8 g (approx 1 heaping tsp.)
5 to 6 months	12.5 g	150 ml	10 g (2 level tsp.)

Home modification of animal milk for the infant over 6 months old

- The infant over 6 months old should continue to have some form of milk.
- Animal milk for a infant over 6 months old **does not have to be diluted**
- Nutritious complementary food should be added to the infant's diet.

Exercise 6.3 Preparation of commercial and home-modified animal milk infant formulas	
Purpose	To demonstrate preparation of commercial and home-modified animal milk infant formulas.
Duration	55 minutes
Instructions	<ul style="list-style-type: none"> ▪ Participants will be assigned to either of four groups, each having an opportunity to participate in discussion of availability, costs and challenges of sustainable supply of commercial infant formula and demonstration of preparation of both commercial infant formula and home-modified animal milk. ▪ These four groups will be subdivided to allow for the following: <ul style="list-style-type: none"> ▪ Two groups will discuss availability, cost and challenges of a sustainable supply of commercial infant formula. ▪ Remaining two groups will gather at the demonstration table for instruction. ▪ Each of the groups will work for 10 minutes, before the groups are rotated so everyone will have the opportunity to discuss and participate in skill-building demonstration for both replacement feeding options. ▪ The trainer will lead a large group discussion on the milk preparation process to close the exercise.

Exercise 6.4 Infant-feeding counselling and support: Role-play	
Purpose	To provide information on issues that may arise when counselling for infant feeding.
Duration	40 minutes
Activities	<ul style="list-style-type: none"> ▪ Refer to the following sections of the Participant Manual: <ul style="list-style-type: none"> ▪ Figure 6.2 “Infant-feeding counselling for mothers who are HIV-infected” flowchart on page 6-19. ▪ Suggested client roles for Exercise 6.4 below ▪ Appendix 6-H on page 6-49. ▪ Pairs of participants will play the roles of mother and HCW. If groups are uneven, a third person can be assigned as observer. The trainer will assign suggested client roles to the pair (listed following this exercise). ▪ Following introductions, the HCW will guide the mother during her role-play combining previously used counselling skills with materials from Appendix 6-H and the Figure 6.2 flowchart. They should include demonstrations of techniques where applicable (for example, cup feeding). ▪ After 20 minutes, participants join the entire group to share their experiences in the debriefing. Trainers will lead the discussion using the following questions: <ul style="list-style-type: none"> ▪ For the mother roles: <ol style="list-style-type: none"> 1. What were the main points learned in the session? 2. Would this session change the way you would feed your infant? 3. If you would not make any changes, why not?

Exercise 6.4 Infant-feeding counselling and support: Role-play	
	<ul style="list-style-type: none"> ▪ For the HCW roles: <ol style="list-style-type: none"> 1. Were there difficulties with any of the steps? If so, why were they difficult? 2. Which steps were most troublesome? 3. What could you do to become better at providing infant-feeding support? 4. Did you feel that you needed to use counselling skills to work with a “mother” who was fearful, anxious, or upset?

Suggested client roles for Exercise 6.4, infant-feeding counselling and support

Scenario 1: Antenatal visit

Your name is Pamela. You are HIV-infected and expect to give birth next month. Because you want to protect your baby from HIV infection, you want to know more about home-modified formulas. You and your husband own two cows, so it would be convenient and inexpensive to make your own home-modified animal milk, but you understand that it is quite complicated.

Scenario 2: Antenatal visit

Your name is Salma. You are HIV-infected and expect to give birth next month. Because you want to protect your baby from HIV infection, you want your counsellor to counsel both you and your husband about breastfeeding options. You do not want to breastfeed because you want to reduce the risk of HIV transmission to your baby. Your husband feels that you should breastfeed. After all, what would his mother think if you were not breastfeeding?

Scenario 3: Postpartum visit

Your name is Suma. You have been breastfeeding your baby for 3 months and would like advice on reducing your baby's risk of HIV. You are willing to stop breastfeeding and start cup feeding the baby, but you are worried about discomfort from engorged breasts and how to comfort your baby during the transition period. You also do not want to get pregnant again.

Scenario 4: Postpartum visit

Your name is Catherine. You have been breastfeeding your 4-month-old baby since he was born and are pleased with how he is growing. You are wondering how you will manage stopping breastfeeding early and are looking for advice on how to express breastmilk and when to start cup feeding for practice.

Scenario 5: Postpartum visit

Your name is Susana and you have come back to the RCH quite upset. You have chosen not to breastfeed since you can afford a good supply of commercial infant formula. You explain that you are trying to do “the right thing” and feel that this is the best way to avoid transmitting HIV to your new son. Your mother-in-law, however, was very upset when she realized that you were not going to breastfeed. You are afraid that others in the community will be concerned as well because everyone else you know breastfeeds.

(For additional resources on infant feeding refer to Appendix 6-H, *HIV and Safer Infant Feeding Basic Concepts*).

Feeding from 6 to 24 months

All infants, including infants who continue to be breastfed, require nutritious foods beginning at 6 months of age. The term *complementary food* refers to any food, whether manufactured or locally prepared, suitable in addition to breastmilk (or a breastmilk substitute). This term is preferred because it implies that the newly introduced foods are provided in addition to the milk feeds; they are not intended to replace milk at this point.

Children should receive continued frequent breastfeeding or cup feeding with commercial infant formula or other milk into the second year of life.

Recommendations for complementary feeding should be based on locally available foods and feeding practices. General principles for complementary feeding include the following:

Introducing complementary foods

- Begin introducing complementary foods in small amounts at 6 months of age. The amount of food required will increase as the child gets older.
- After complementary foods have been introduced, the infant will continue to need breastmilk or milk in some form frequently throughout the day.
- For infants who are not breastfed, animal milk requirements after 6 months are about 250 mls (1cup) for children receiving other sources of animal proteins. Children require 2 cups of milk per day if milk is the only source of animal protein.
- Infants older than 6 months do not require dilution of animal milks. However, fresh animal's milk should still be boiled to kill germs and improve digestibility. Milk may also be given as sour milk or yoghurt.
- No special preparation is needed for processed, pasteurized, or ultra-heat treated (UHT) milk.
- The mother or caregiver should increase the number of complementary feedings as the child gets older. The appropriate number of feedings depends on the energy density of the local foods and the usual amounts consumed at each feeding. When no milk is available, the diet should include other animal-source foods and/or enriched foods.
- Table 6.9 on complementary foods shows the type, frequency and amounts of complementary foods that the average healthy infant requires at different ages. If the energy density or the amount of food per meal is low, more frequent feedings may be required.
- Energy requirements are higher for unhealthy infants because of the metabolic effects of infections. Energy requirements also are higher for infants who are severely malnourished and undergoing nutritional rehabilitation.
- Mothers should gradually increase food consistency and the variety of foods offered as the infant gets older, adapting to the infant's nutritional requirements and physical abilities.

Table 6.9: 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 ⁺
9–11 months	Finely chopped or mashed foods and foods that infant can pick up	3 meals plus 1 snack between meals plus milk feeds	2/3 cup ⁺
12–24 months	Family foods, chopped or mashed if necessary	3 meals plus 2 snacks between meals plus milk feeds	1 full cup ⁺
If infant is not breastfed, give in addition: 1-2 cups of milk per day and 1-2 extra meals per day.			

* One teaspoon = 5 ml

+ One cup = 250 ml

- Offer children 6 months and older an increasing variety of nutrient-dense foods. On a daily basis, or as often as possible, they should eat animal foods such as meat, poultry, fish, eggs, dairy products, or other adequate local sources of protein. Children should also eat fruit and vegetables that are rich in vitamin A daily. Satisfying the nutritional needs of children in this age group through a vegetarian diet is difficult.
- If nutritionally adequate complementary foods or fortified complementary foods are not available locally, consider giving the child a vitamin-mineral supplement to avoid growth and development deficiencies.
- Mothers and caregivers should avoid giving drinks with low nutrient value, such as tea and coffee (which interfere with iron absorption) and sugary drinks such as soda. The amount of juice offered should be limited to avoid displacing more nutrient-rich foods.
- Avoid offering foods that may cause choking, such as those that have a shape or consistency that could cause the food to become lodged in the trachea. Foods to avoid include nuts, grapes and raw carrots.

Responsive feeding

- Feed infants directly and assist older children when they feed themselves, being sensitive to when the infant or child is hungry or full.
- Feed slowly and patiently, encouraging the child to eat, but do not force feed.
- Encourage food intake by experimenting with different food combinations, tastes and textures, especially if the child refuses to eat.
- Minimize distractions during meals if the child loses interest easily.
- Remember that feeding times are periods of learning and love: talk to children during feeding, using eye-to-eye contact.

Good hygiene and proper food handling

- Wash hands before food preparation and eating.
- Store foods safely and serve foods immediately after preparation.
- Use clean utensils to prepare and serve food.
- Use clean cups and bowls to feed children.
- Avoid using feeding bottles, which are difficult to keep clean.

UNIT 4 Nutritional Considerations for the HIV-Infected Breastfeeding Mother

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Describe additional nutrition requirements for HIV-infected breastfeeding mothers.

Causes of poor nutrition in HIV-infected mothers

Some of the things that lead to poor nutrition or malnutrition in the HIV-infected mother are:

- Poor intake of food
- Medical conditions that may make it difficult to eat
- Malabsorption in the gut
- Increased demand for energy with infection

Poor intake of food:

- HIV-infected persons often cannot eat adequate amounts of food. They may not have enough money to buy food because they are too sick to work. They may be too sick to prepare food for themselves.

Medical conditions that may make it difficult to eat:

- Painful oral conditions can make it difficult to chew and swallow. These include oral candida and herpes simplex virus (HSV).
- Nausea, vomiting and possible gastric irritation related to HIV infection, pregnancy itself and ARV medication can make it difficult to keep food down.
- HIV infection and ARV medication may cause a lack of appetite.

Malabsorption in the gastrointestinal tract:

- HIV can cause absorption problems in the gut. In addition, women with HIV are more susceptible to bacterial, protozoal, fungal, or viral infections that can affect the gut.

Increased demand for energy:

- When infected with HIV, a women's immune system is constantly trying to fight the virus. This fight requires additional energy.

Early recognition and management of HIV-related symptoms such as loss of appetite, nausea, diarrhoea, or oral lesions is needed to help women maintain adequate nutrient intake.

See Appendix 7-B in Module 7 for recommendations for maximizing food intake for HIV-infected women.

Nutritional requirements during lactation and postpartum period

Maternal nutrition affects lactation performance

- Lactation burns a lot of energy. Lactating women need an additional 500 kcal every day. This is the equivalent of one extra meal a day, for example, 2 bananas, 1 piece of fried chicken, 1 cup of rice and a serving of spinach.
- Women who are breastfeeding exclusively have the highest energy requirements.

Breastfeeding women can meet these requirements by:

- Increasing their nutritional intake.
- Using the energy the body has stored during pregnancy.
- Decreasing their level of physical activity.

When the mothers do not get enough nutritious food, the body uses its nutritional stores to maintain breastmilk production and milk production declines.

Nutritional considerations for mothers

HCWs can offer counselling and support to enhance the nutritional needs of mothers and their children. Important things that can affect maternal nutrition that should be discussed in infant-feeding counselling include:

- A women's cultural beliefs
- The amount and quality of the food she eats every day
- Her daily workload
- HIV-related symptoms that can affect appetite or eating

Supporting nutritional needs of the mother

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. Examples include: milk, fish, octopus, spinach, certain fruits, beans and peas.

Beliefs around what a pregnant or lactating woman should or should not eat can lead to a poor diet. HCWs should be conscious of food beliefs and traditions and be prepared to address them with their clients.

It is essential that the HCWs counsel women on eating a balanced diet based on their economic situation. Women's work requires energy from food. Even a light work load over a long period of time is demanding on a pregnant or lactating woman's body. The competing needs of women's physical work and lactation can lead to malnutrition or undernutrition.

Micronutrient requirements increase during pregnancy and lactation and can affect the overall health of a pregnant or lactating woman.

Signs of Malnutrition

Some signs of malnutrition or undernutrition 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 (e.g., rachitic rosary)
- **Skin:** Severe dryness or scaliness, atrophy, petechiae (small red spots on the skin that usually indicate a low platelet count), or ecchymoses
- **Oral:** 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

Exercise 6.5 Maintaining optimal nutrition: Small-group discussion	
Purpose	Assist HCWs to give supportive advice to lactating mothers for maintaining a healthy nutritional status during the postpartum period.
Duration	35 minutes
Introduction	This exercise explores strategies for recognizing and addressing the nutritional needs of HIV-infected mothers, particularly those who are breastfeeding.
Activities: Group Work	<ul style="list-style-type: none"> ▪ Participants will be asked to develop a list of locally available foods that are high in nutritional value, affordable and culturally acceptable to mothers. ▪ In three groups, participants will discuss the list of foods, answering the following questions: <ol style="list-style-type: none"> 1) Are these foods found throughout Tanzania or are they only available in certain regions? 2) What nutrients are found in these foods? 3) What things would make it difficult for women to eat more of these nutritious foods? 4) Are there cultural beliefs about these foods that would prevent pregnant and lactating women from eating them? 5) What is your advice for improving the nutrition of lactating mothers in your communities? 6) Are nutritional counsellors available in your community for referral? ▪ After rejoining the large group, the three smaller groups will present their compiled lists and their answers to the questions above, as instructed by the trainer.

Module 6: Key Points

- Without interventions, 5-20% of infants born to mothers infected with HIV may become HIV-infected during breastfeeding.
- National policies promote the parents' right to choose how they want to feed their infant; the HCW's job is to support their choice.
- Two documents that support national infant-feeding policies include:
 - Baby-Friendly Hospital Initiative (BFHI)
 - National Regulation of Marketing of Marketing of Breastmilk Substitutes and Designated Products
- All women, regardless of their HIV status, require infant-feeding counselling and support.
- HIV-infected women should exclusively breastfeed for the first 6 months of life, stopping only when it can be done safely. When replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS), HIV-infected women should replacement feed.
- At six months, if replacement feeding is still not acceptable, feasible, affordable, sustainable and safe, continuation of breastfeeding with additional complementary foods is recommended
- Good breastfeeding technique is essential to successful breastfeeding and avoidance of breast-related problems.
- Replacement feeding options include commercial infant formula and home-modified animal milk with micronutrient supplementation.
- Complementary feeding from 6 to 24 months of age is in addition to initial feeding option (breastfeeding or replacement feeding) and the amount of food increases as the child gets older.
- Non-breastfeeding women may require additional support in the community.
- Postpartum counselling and infant follow-up are required throughout the first 2 years of the infant's life to monitor growth and development.
- Breastfeeding mothers require additional calories and nutrients to maintain good health and energy level.
- Early recognition of HIV-related symptoms that affect appetite and food intake of the mother will allow for early interventions.

APPENDIX 6-A Revised international infant-feeding recommendations for mothers who are HIV-infected (2006)

WHO HIV and Infant Feeding Technical Consultation Held on Behalf of the Inter-Agency Task Team (IATT) on Prevention of HIV Infections in Pregnant Women, Mothers, and their Infants Geneva, October 25-27, 2006

Consensus Statement

Researchers, programme implementers, infant feeding experts and representatives of the IATT, UN agencies, the WHO Regional Office for Africa and six WHO headquarters departments gathered in Geneva in order to review the substantial body of new evidence and experience regarding HIV and infant feeding that has been accumulating since a previous technical consultation in October 2000, and since the Glion and Abuja calls to action on the prevention of mother to child transmission of HIV. The aim was to establish whether it is possible to clarify and refine the existing UN guidance, which was based on the recommendations from the previous meeting

Recommendations:

The following recommendations for policy-makers and programme managers are intended to supplement, clarify and update existing UN guidance and do not replace it. Based on this consultation, a technical update of the relevant UN guidance will be forthcoming.

- The most appropriate infant feeding option for an HIV-infected mother should continue to depend on her individual circumstances, including her health status and the local situation, but should take greater consideration of the health services available and the counselling and support she is likely to receive.
- Exclusive breastfeeding is recommended for HIV-infected women for the first 6 months of life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe for them and their infants before that time.
- When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected women is recommended.
- At six months, if replacement feeding is still not acceptable, feasible, affordable, sustainable and safe, continuation of breastfeeding with additional complementary foods is recommended, while the mother and baby continue to be regularly assessed. All breastfeeding should stop once a nutritionally adequate and safe diet without breast milk can be provided.
- Whatever the feeding decision, health services should follow-up all HIV-exposed infants, and continue to offer infant feeding counselling and support, particularly at key points when feeding decisions may be reconsidered, such as the time of early infant diagnosis and at six months of age.
- Breastfeeding mothers of infants and young children who are known to be HIV-infected should be strongly encouraged to continue breastfeeding.
- Governments and other stakeholders should re-vitalize breastfeeding protection, promotion and support in the general population. They should also actively support HIV-infected mothers who choose to exclusively breastfeed, and take measures to make replacement feeding safer for HIV-infected women who choose that option.

- National programmes should provide all HIV-exposed infants and their mothers with a full package of child survival and reproductive health interventions¹ with effective linkages to HIV prevention, treatment and care services. In addition, health services should make special efforts to support primary prevention for women who test negative in antenatal and delivery settings, with particular attention to the breastfeeding period.
- Governments should ensure that the package of interventions referenced above, as well as the conditions described in current guidance², are available before any distribution of free commercial infant formula is considered.
- Governments and donors should greatly increase their commitment and resources for implementation of the Global Strategy for Infant and Young Child Feeding and the UN HIV and Infant Feeding Framework for Priority Action in order to effectively prevent postnatal HIV infections, improve HIV-free survival and achieve relevant UNGASS goals.

This appendix was adapted from: World Health Organisation, 2006. *WHO HIV and Infant Feeding Technical Consultation Held on Behalf of the Inter-Agency Task Team (IATT) on Prevention of HIV Infections in Pregnant Women, Mothers, and their Infants. Consensus Statement*. Geneva, October 25-27, 2006 Retrieved 7, May 2007, from: <http://www.who.int/hiv/mediacentre/Infantfeedingconsensusstatement.pdf>

¹ See: WHO. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants in resource-limited settings. Geneva, 2006; WHO. The World Health Report: Make every mother and child count. Geneva 2005.

² See http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm

APPENDIX 6-B Baby-Friendly Hospital Initiative (BFHI)

Frequently Asked Questions about the integration of PMTCT into the Baby-Friendly Hospital Initiative

Adapted from: Ministry of Health, The United Republic of Tanzania. 2004. PMTCT Manual.

Does the hospital breastfeeding policy need to change?

- Hospital policies do not need to change although additional points can be added stating that:
 - It is important that pregnant women are tested for HIV so that they can make informed decisions about infant feeding.
 - Mothers infected with HIV will be supported in their infant-feeding decision.
 - Most women are not HIV-infected and breastfeeding should continue to be promoted, protected and supported for these women.
 - It will remain important to ensure that the hospital does not receive free supplies of formula from manufacturers, give mothers free samples, or allow any promotion of formula, even if some HIV-infected mothers are replacement feeding.

Do healthcare workers need additional training in how to assist women who are HIV-infected as they decide how to feed their infant?

- HCWs will need additional training in breastfeeding counselling to support all women who choose that option.
- HCWs should also receive training about how HIV is transmitted and the risk associated with breastfeeding and not breastfeeding.
- Stigmatizing and discriminatory attitudes of HCWs toward PLWHAs may need to be addressed with an emphasis on the mother as the ultimate decision-maker regarding breastfeeding.
- HCWs will need information on the safe preparation and use of replacement feeds and the skill to teach this to mothers and other caregivers.

Should mothers who are HIV-infected have early skin-to-skin contact if they are not breastfeeding?

- Yes, cuddling the infant cannot transmit HIV.
- Mothers who have chosen not to breastfeed still need encouragement to hold, cuddle and have physical contact with their babies from birth onward. This helps a mother to feel close and affectionate toward her infant.
- Mothers who are HIV-infected and who have decided to breastfeed should be assisted to put the infant to the breast soon as possible after delivery.

Regarding step five, should healthcare workers show HIV-infected mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants?

- First ascertain the mother's infant-feeding choice. If the mother has decided to breastfeed, she needs assistance and support to establish breastfeeding, to use good breastfeeding techniques in order to prevent nipple damage and mastitis and to breastfeed exclusively.

APPENDIX 6-B Baby-Friendly Hospital Initiative (BFHI) *(continued)*

- Mothers who choose not to breastfeed need to discuss what alternative milk they will use and how they will prepare it and give it to the infant. Instruction should be given privately and confidentially to avoid stigmatizing the mother.
- Mothers who have decided not to breastfeed may need help with breast care while waiting for their milk production to cease.

How does step six, “give newborn infants no food or drink other than breastmilk, unless medically indicated” apply to a mother who is HIV-infected?

- When a mother has been counselled, tested and found to be HIV-infected and has decided not to breastfeed, it is medically indicated to give the infant replacement feedings in place of breastmilk.
- If a mother chooses to breastfeed she needs help to do so exclusively.

How does step seven, rooming-in, apply to an HIV-infected mother?

- All healthy babies benefit from being near their mother. Mothers who are HIV-infected do not need to be separated from their babies.
- Mothers who are not breastfeeding need to have plenty of physical contact with their infants, which reinforces the bond between mother and child.
- Mothers who are not breastfeeding should practise preparing replacement feeds and cup feeding while their infant is in hospital. The HCWs should assist the mother in the consistent and accurate preparation of feeds.

How does step eight, “encourage breastfeeding on demand” apply to HIV-infected women?

- All babies differ in the timing and amount of feedings. Mothers should be taught to recognize the visual and audible clues that indicate the infant is hungry and to feed on the infant’s demand.

Does step nine “give infants no artificial teats or pacifiers” still apply?

- Artificial teats, bottles and pacifiers (dummies) can carry infection and are not needed, even for the non-breastfeeding infant.
- Cup feeding is recommended for infants who are replacement fed.
- If an infant receives a nipple other than its mother’s, a condition known as nipple confusion can result. The infant uses an entirely different technique to suck on an artificial nipple than for breastfeeding.
- For soothing, infants can be encouraged to suck on the mother’s clean finger, if not breastfeeding.

Step ten is to “foster the establishment of breastfeeding support groups and refer mothers to them on discharge from hospital or clinic”; how does this step apply?

- Many mothers need support regardless of their feeding method. Mothers with HIV who are not breastfeeding in a community where most mothers breastfeed may need extra support from a group concerned particularly with HIV.

APPENDIX 6-C The National Regulation of Marketing of Breastmilk Substitutes and Designated Products

Summary of National Regulation

The National Regulation of Marketing of Breastmilk Substitutes and Designated Products seeks to encourage and protect breastfeeding and to control marketing practices so they do not inappropriately promote products for artificial feeding. The National Regulation applies to artificial milk for babies and to other products used to feed babies, especially when they are meant for use in a feeding bottle. This National Regulation also applies to feeding bottles and artificial teats. Poor breastfeeding practice that leads to the development of breast and nipple disease and mixed feeding are dangerous for the infant of an HIV-infected mother because they increase the likelihood of breastmilk transmission of HIV. Since most women do not know their HIV-infection status, it is imperative that we promote good breastfeeding practice universally.

Ten important provisions of the National Regulation:

- No advertising of these products to the public
- No free samples to mothers
- No promotion of products in healthcare facilities
- No companies to advise mothers
- No gifts or personal samples to health workers
- No words or pictures idealizing artificial feeding, including pictures of infants or text about the products
- Scientific and factual information to health workers
- All information on artificial infant feeding, including labels, to explain the benefits of breastfeeding and the costs and hazards associated with artificial feeding
- No promotion of unsuitable products such as sweetened condensed milk
- Quality of all products high and taking into account climate and storage conditions of the country in which they are used

The National Regulation helps provide safe and adequate nutrition for children by:

- Protecting and promoting breastfeeding
- Supporting proper and informed use of breastmilk substitutes when necessary
- Promoting acceptable marketing and distributing practices

APPENDIX 6-D Good Breastfeeding Technique

Good breastfeeding technique begins with correct positioning and attachment.

Mother's position




Mother should sit or lie comfortably

Types of positions³

Cradle hold position – most common with newborns

Clutch hold position – good for mothers with large breasts; ideal with twins

Side lying or sleeping position

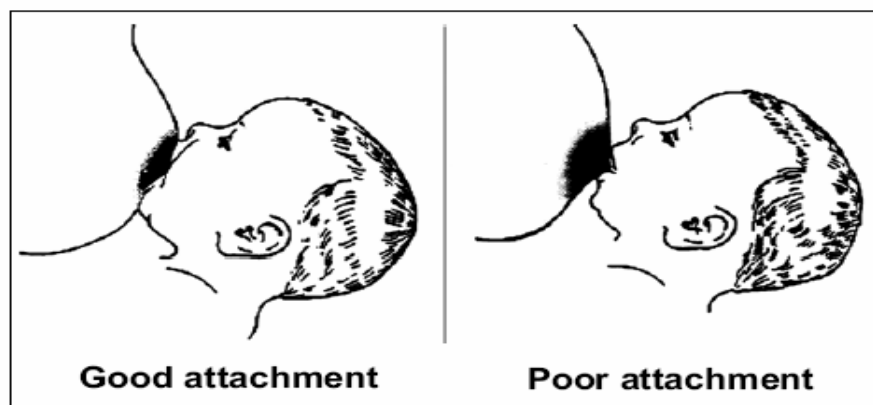
	<p>Cradle hold This is a commonly used position that is comfortable for most mothers.</p> <ul style="list-style-type: none"> Hold your infant with his head on your forearm and his/her whole body facing yours.
	<p>Clutch Hold This is good for mothers with large breasts or inverted (flat) nipples.</p> <ul style="list-style-type: none"> Hold your infant at your side, lying on his/her back, with his/her head at the level of your nipple. Support infant's head with the palm of your hand at the base of his/her head.
	<p>Side-Lying Position This allows mothers to rest or sleep while infant nurses. Good for mothers who have had caesarean births.</p> <ul style="list-style-type: none"> Lie on your side with infant facing you. Pull infant close and guide his/her mouth to your nipple.

Attachment

- Support the breast
- Bring infant quickly to the breast
- Look for signs of proper attachment:
 - mouth wide open
 - more areola seen above than below
 - chin touching the breast
 - lower lip curved outward

³ Adapted from The National Women's Health Information Center, An Easy Guide to Breastfeeding U.S. Department of Health and Human Services, Office of Women's Health. May, 2004 <http://www.4woman.gov/pub/BF.General.pdf>

APPENDIX 6-D Good Breastfeeding Technique *(continued)*



Adapted from the Kenya National PMTCT Training Curriculum, 2005.

APPENDIX 6-E Steps to Express and Pasteurize Breastmilk

How to Express Breastmilk

- 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 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 breastmilk in a clean, covered container.
- You can store fresh breastmilk for up to 8 hours at room temperature up to 24 hours in a refrigerator.

APPENDIX 6-E Steps to Express and Pasteurize Breastmilk

(continued)

Steps for pasteurizing the milk



Before pasteurizing the milk, gather the following things:

- Clean containers with wide necks and covers, enough to store the milk
- A small pot to heat the milk
- A large container of cool water
- Fuel to heat the water
- Soap and clean water to wash the equipment



Follow these steps to pasteurize and store milk:

- Wash all of the pots, cups and containers with soap and water.
- 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.
- Only boil enough expressed milk for one feed.
- Store it in a clean, covered container in a cool place and use it within **1 hour**.
- Feed the infant using a cup. Throw away any unused milk.



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 6-F Micronutrients and Home-Modified Animal Milk

Comparing Breastmilk to Cow's Milk

Human Breastmilk	Cow's Milk
Proteins	Proteins
Correct amount, easy to digest (more whey protein)	Too much, difficult to digest (more casein protein)
Fat	Fat
Correct amount of essential fatty acids, with lipase to aid digestion	Lacks essential fatty acids, no lipase
Vitamins	Vitamins
Correct amount	Not enough A, C
Minerals	Minerals
Correct amount	Too many
Iron	Iron
Correct amount and well-absorbed	Inadequate amount and not well-absorbed
Specific anti-infective properties for infants	Specific anti-infective properties for infants
Present	Absent
Specific growth factors for infants	Specific growth factors for infants
Present	Absent

Adapted from WHO/CDR/93.6WHO/Wellstart

APPENDIX 6-F Micronutrients and Home-Modified Animal Milk

The following is the composition of a micronutrient supplement needed **daily** to fortify a diet of 100 kcal of the infant milk mix (100 ml of milk + 10 g sugar + 50 ml water):

Minerals:	
manganese	7.5 µg
iron	1.5 mg
copper	100 µg
zinc	205 µg
iodine	5.6 µg
Vitamins:	
Vitamin A	300 IU
Vitamin D	50 IU
Vitamin E	1 IU
Vitamin C	10 mg
Vitamin B1	50 µg
Vitamin B2	80 µg
Niacin	300 µg
Vitamin B6	5 µg
Folic acid	5 µg
Pantothenic acid	400 µg
Vitamin B12	0.2 µg
Vitamin K	5 µg
Biotin	2 µg

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 6-G Advantages of cup feeding

Breastmilk substitutes and expressed breastmilk should be given from a cup.

HCWs should explain to mothers and families that cup feeding is preferable for the following reasons:

- Cups are safer, as they are easier to clean with soap and water than bottles.
- Cups are less likely than bottles to be carried around for a long time (which gives bacteria the opportunity to multiply).
- Cup feeding requires the mother or other caregiver to hold and have more contact with the infant and provides more psychosocial stimulation than bottle feeding.
- Cup feeding is better than feeding with a cup and spoon because spoon feeding takes longer and the mother may stop before the infant has had enough.

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

Using 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 boiled for sterilization; this takes time and fuel.
- Bottles and “teats” cost more than cups and are less readily available.

HCWs should receive training to show mothers and families how to cup feed.


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 its mouth and eyes. *
- **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, he/she will close its mouth. If the infant has not taken the calculated amount, it 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.



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

APPENDIX 6-G Advantages of cup feeding *(continued)*

What you do... 1. Get Ready <ul style="list-style-type: none"> ▪ Wash hands with soap and water. ▪ Hold the infant close and comfortable. ▪ Pour small amount of prepared milk/formula in infant's cup. 	Why you do it... <ul style="list-style-type: none"> ▪ 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 <ul style="list-style-type: none"> ▪ 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 infant to continue feeding as long as possible or until feed is finished. 	<ul style="list-style-type: none"> ▪ 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 <ul style="list-style-type: none"> ▪ Wash used utensils with soap and clean water immediately after feeding. ▪ Look to see that there is no milk in the clean utensils. ▪ 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. 	<ul style="list-style-type: none"> ▪ Milk/formula is sweet and germs grow more quickly. ▪ Contaminated utensils may make your infant sick. Follow directions for sterilising.
<p>Cup feeding is always to be used instead of bottle feeding.</p> <hr style="border-top: 1px dashed black;"/> <p><i>Be prepared</i></p> <ol style="list-style-type: none"> 1. Use a reliable family-planning method to prevent getting pregnant too soon. 2. Know how to give replacement fluids if infant develops diarrhoea. 3. 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 health care managers and supervisors*. Retrieved 30 July 2004, from http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/HIV_IF_MS.pdf

APPENDIX 6-H HIV and Safer Infant Feeding: Basic Concepts

Infant-feeding Counselling for HIV-Infected Women: Antenatal Sessions

Counsellor checklist

During the first antenatal infant-feeding counselling session	<ul style="list-style-type: none"> ✓ Ask: <ul style="list-style-type: none"> ✓ “What is your understanding of how a baby can get HIV from its mother?” ✓ “Do you understand that it is possible that your baby may already have HIV infection?” ✓ “How do you think you might react if your baby does have HIV infection?” “How will your partner react?” ✓ “How do you plan to feed your baby?” ✓ “Which other members of your family may be involved in the infant-feeding decision?” ✓ “What experiences do you have with this feeding method (previous children or familiar with experiences of other women)?” ✓ Summarize the benefits and risks of the mother’s proposed feeding method. ✓ Summarize national guidance for HIV-infected women. ✓ Assist her to choose the most feasible option. ✓ Review how to make her choice as safe as possible. ✓ If breastfeeding is her choice, ask... “For how long do you expect to breastfeed?” “When do you expect to add other foods/liquids?” “Show me how you expect to attach your baby to the breast.” ✓ If formula is her choice, ask “Tell me how you will prepare each feed step-by-step.” “Which of the necessary supplies do you have?” “How will you wash the equipment?” ✓ Emphasize the importance of follow-up care for her and her infant ✓ Ask “What questions do you have?”
Follow-up antenatal sessions	<ul style="list-style-type: none"> ✓ Discuss any of the above areas that were not fully addressed in the first session ✓ Demonstrate how to implement the chosen feeding method. If appropriate, provide her with written instructions or pamphlet. ✓ “What additional questions do you have?”

APPENDIX 6-H HIV and Safer Infant Feeding: Basic Concepts

(continued)

Infant-feeding Counselling for HIV-Infected Women: Postpartum Sessions

Counsellor checklist

If the women has chosen to breastfeed:

- ✓ Demonstrate techniques for proper infant positioning and attachment to the breast.
- ✓ Encourage on-demand breastfeeding and prepare the mother for the expected frequency of breastfeeding.
- ✓ Suggest strategies for increasing milk supply and for maintaining exclusive breastfeeding.
- ✓ Support her in developing strategies for resisting pressure for mixed feeding.
- ✓ Provide information on:
 - Prevention, identification and management of cracked nipples, mastitis and other breast conditions
 - Additional nutritional requirements for breastfeeding women
 - Family-planning and safer sex
 - Prevention, treatment and dietary management of diarrhoea and other illnesses that may interfere with feeding
 - Changes in nutritional needs as the infant gets older and the accompanying changes in frequency of breastfeeding
 - Complementary foods and feeding practices after 6 months
- ✓ Offer strategies to stop breastfeeding early and to provide the infant with nutritionally adequate foods.
- ✓ Summarize techniques to express, heat-treat and safely store breastmilk.

APPENDIX 6-H HIV and Safer Infant Feeding: Basic Concepts

(continued)

Counsellor checklist

<p>If the women has chosen replacement feeding:</p>	<ul style="list-style-type: none"> ✓ Summarize instructions on adequate replacement feeding. ✓ Identify whether she has access to, and can afford to buy, a reliable supply of replacement feeds (or all of the ingredients in the home-prepared formula including safe water); the necessary utensils to prepare and serve the feeds; and supplies to clean them (soap for washing), fuel for boiling water. ✓ Assess her understanding of the steps in hygienically preparing the replacement milk, including the need to boil water, the importance of measuring all ingredients carefully and cleaning equipment between preparations. ✓ Convey the need for modification of animal milk with sugar, clean water and multivitamins if home-prepared formula is used. ✓ Teach her how to cup feed. ✓ Review principles of safe milk storage (length of time, temperature, conditions). ✓ Support her in developing strategies to resist pressure for mixed feeding. ✓ Review how much milk the infant should be fed. ✓ Provide information on: <ul style="list-style-type: none"> ▪ Family-planning and safer sex ▪ Prevention, treatment and dietary management of diarrhoea and other illnesses that may interfere with feeding ▪ Changes in nutritional needs as the infant gets older and the accompanying changes in frequency of feeding ▪ Complementary foods and feeding practices after 6 months ✓ Inform her of the need for additional nutrients, such as multivitamin supplements. ✓ Assist with developing strategies to respond to family/friends about not breastfeeding; if necessary support her in creating responses to questions.
<p>All postpartum infant-feeding discussions should include:</p>	<ul style="list-style-type: none"> ✓ How the mother thinks the infant feeding is progressing ✓ Identifications and solutions for any concerns or problems she is having with her feeding choice ✓ Reactions of family/friends to her infant-feeding choice ✓ Assessment of the safety of infant-feeding practices; review steps to make choice safer

Adapted from the Kenya National PMTCT Training Curriculum, 2005.

Module 7 Comprehensive Care and Support for Mothers and Families with HIV Infection



Total Module Time: 440 minutes (7 hours, 20 minutes)

MODULE OBJECTIVES

After completing the module, the participant will be able to:

- Define the treatment, care and support needs of HIV-infected patients.
- Describe the family-centred components of care for the HIV-infected mother and her family, also known as “PMTCT-Plus.”
- Describe the assessment of common opportunistic and HIV-related infections.
- Understand how to prevent opportunistic infections in adults.
- Describe the components of ongoing care of HIV-exposed or HIV-infected infants and children.
- Understand HIV testing guidelines for infants and children.
- Understand how to prevent opportunistic infections, including malaria, in infants and children.
- Describe the criteria for initiating ARV therapy for adults and children.
- Recognise the most common side effects of ARV medications used for ARV therapy nationally
- Assess when HIV-infected mothers should be referred to care and treatment clinics (CTC).
- Identify community resources for ongoing family support
- Identify techniques for ensuring effective community participation in PMTCT programmes.

UNIT 1 Follow-up Care and Support of the Mother with HIV Infection

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Define the treatment, care and support needs of HIV-infected patients.
- Describe the family-centred components of care for the HIV-infected mother and her family, also known as “PMTCT-Plus.”
- Describe the assessment of common opportunistic and HIV-related infections.
- Understand how to prevent opportunistic infections in adults.

Element 4 of a comprehensive approach to PMTCT is providing treatment, care and support to women infected with HIV, their infants and children and their families.

Providing comprehensive treatment, care and support includes direct provision of the following services at PMTCT sites or by coordinated and strategic referrals:

For the mother and partner

- Prevention and treatment of opportunistic infections
- Counselling on safer infant feeding practices
- Psychological and social support
- Counselling about safer sex for HIV-infected and HIV discordant couples
- Nutritional counselling

For the child

- Monitoring growth and development
- Providing immunisations and nutritional supplements
- Prevention and treatment of opportunistic infections
- Clinical presumptive diagnosis of HIV or diagnosis by HIV testing

For the family

- Family planning counselling, including contraceptive options.
- Assessment and referral for ARV therapy according to national guidelines
- Referral and linkage to community service organisations and agencies to promote continuity of care.

Defining treatment, care and support

- Treatment is the process of providing ARV therapy to an HIV-infected patient.
- Care can be defined as the provision of HIV-related medical services to the patient for the purposes of maintaining or improving health.
- Support is the provision of critical non-medical services, including psychological and social support, for HIV-infected and affected patients and their families.

Providing treatment, care and support services in a coordinated and effective manner to women and their families is the goal of comprehensive care. Comprehensive HIV care is essential to treat acute health problems, prevent HIV disease progression, prevent HIV transmission to infants and partners and maintain health.

Postpartum care and support needs of women and families with HIV

Increasing the use of postpartum care

During ANC, healthcare workers (HCWs) should tell all patients that postpartum care is important and encourage them to use these services. Whenever possible, HCWs at ANC and labour and delivery facilities should give mothers referral information for follow-up care. If possible the referral should include the time, location and contact information for the appointment. Women who have given birth in a healthcare facility should receive postpartum appointments upon discharge. For women likely to give birth at home, it is advisable to schedule the first follow-up appointment during ANC.

Appropriate postpartum referrals to services help to identify and resolve potential health problems in the mother and child. Postpartum care is especially important for HIV-infected women and their HIV-exposed children because they require referrals for comprehensive care. Both mother and child are particularly vulnerable to infections and complications.

Facility managers should establish procedures to confirm that women attend a referral appointment. This will require that HCWs in ANC and labour and delivery wards think of ways to strengthen the links to postpartum services.

The first postpartum appointment should be within one week (7 days) after birth; subsequent visits should take place at 28 days and again 42 days after birth.

It may be difficult to coordinate postpartum appointments for women who have given birth at home. HCWs (e.g., public health nurses) will need community support to help these women access care. Home birth attendants can be trained to encourage women who give birth at home to come into a health facility for postpartum care. This is especially important for HIV-infected mothers, as ARV prophylaxis for the infant needs to be given to the infant within 72 hours of birth to prevent MTCT. Creating a system of community linkages to help women in rural areas access postpartum care requires the creative and dedicated efforts of community members such as home birth attendants, those involved in registration of home deliveries, community-service organisations (CSOs) and IMCI-Corps

Postpartum care and support

HIV-infected women need the following postpartum care and support:

- Assessment of healing and routine physical assessment for primary care needs
- Infant feeding support
- Sexual and reproductive health care including family planning
- Nutrition counselling, care and support
- Prevention and treatment of opportunistic infections
- Prevention and treatment of malaria
- Prophylaxis, screening and treatment of TB
- Assessment and referral for ARV therapy, if the woman is not already receiving treatment
- Social and psychological support
- Education and support for infant/child follow-up care

Assessment of healing and routine physical assessment

The following is a list of activities that are usually performed during a postpartum visit.

The HCW asks the patient:

- When and where did you deliver?
- How are you feeling?
- Have you had any pain or fever or heavy bleeding since delivery?

- Do you have any problems urinating?
- Have you decided on any contraception?
- How do your breasts feel?
- Do you have any other concerns?
- Have you had any problems taking your ARV prophylaxis (if prescribed?)
- Have you had any problems giving your infant ARV prophylaxis (if prescribed?)

The HCW checks patient records:

- Were there any complications during delivery?
- Is patient taking any medications?
- Is the patient HIV-infected?

The HCW:

- Measures blood pressure and temperature.
- Monitors uterine involution (shrinking).
 - The HCW should feel the patient's uterus. It should be well contracted, hard and round.
- Checks healing of any repaired genital/perineal lacerations.
- Examines the vulva and perineum for tears or signs of infection; redness, swelling or pus
- Confirms that postpartum bleeding has stopped.
- Checks for signs of infection.
 - The HCW should look at the patient's sanitary pad to estimate the amount of bleeding and examine the lochia.
 - Does the lochia smell? (Foul smelling lochia with fever is a sign of infection.)
- Checks for signs of anaemia: checks for pallor and asks about fatigue.
- Reviews postpartum nutritional requirements including fluids.
- Works with the mother to develop a plan to address challenges to follow-up care and treatment.

Infant feeding support

In the postpartum sessions the HCWs should:

- Assess progress of infant feeding.
- Assist the mother to safely implement her chosen feeding option.
- Assess the amount of family support for the infant feeding option.
- Work with the mother to develop a plan to address challenges she may be experiencing.

Details on how to provide infant feeding support to HIV-infected women during postpartum visits are provided in Module 6: *Infant Feeding in the Context of HIV Infection*.

Family-planning counselling

All mothers should be counselled to start using some form of contraception within 6 weeks of delivery. During postpartum visits, HCWs should counsel the patient about the various family-planning methods, relating them to the patient's particular situation and need. Offer family-planning information in an accurate and unbiased manner. Partners should be involved in family-planning counselling whenever possible. During family-planning counselling, a HCW should:

- Discuss condom use as dual protection against STIs, HIV 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 recognize STI symptoms and where to go for assessment and treatment.
- Answer any questions the mother may have about safer sex behaviours.

When counselling HIV-infected women in family planning, it is important to remember that patients have the:

- Right to decide whether or not to practise family planning.
- Freedom to choose which method to use.

- Right to privacy and confidentiality.
- Right to refuse any type of examination.

Refer to Appendix 2-A in Module 2 for more information on how to conduct a family planning counselling session.

Nutritional counselling, care and support

During postpartum visits, HCWs should ask women if they are getting enough food, counsel them about nutritious, locally available foods and emphasize the importance of cleanliness during food preparation and storage. PMTCT HCWs need to teach mothers how to prepare food and feeds in a hygienic manner.

Well-nourished women lose 0.4 to 0.8 kg a month during the first six months after delivery, and then lose weight more slowly. If a mother does not get enough food or essential micronutrients during this time, especially if she is breastfeeding or has advanced HIV infection, she may have to stop breastfeeding early and her child's growth may be stunted as a result.

Babies who are stunted, or who stop breastfeeding too early, have an increased risk of malnutrition and death. Appendix 7-B: *Suggestions to Maximise Food Intake for People Living with HIV* contains suggestions of how to increase food intake for women living with HIV.

HIV-infected women and children are especially vulnerable to bacterial infections because their immune systems are weakened. One way to avoid these infections is to observe strict hygiene while preparing and storing food.

HIV-infected women receiving HIV-related medications may need additional nutritional counselling to manage side effects and avoid nutrition-related complications.

Adequate nutrition, exercise, rest, good hygiene practices and abstinence from harmful habits such as smoking, alcohol and drug abuse, support overall health and improve immune function.

Psychosocial support

People with HIV face stigma in many communities. Women who are HIV-infected are therefore often reluctant to disclose their HIV status to partners, family or friends. Moreover, a woman who has just learned of her HIV status during ANC may still be adjusting to her diagnosis. Regular monitoring of mental health and psychosocial support needs are critical at all stages of HIV infection. The following services should be offered directly or by referral:

- Support to help the woman come to terms with her diagnosis.
- Psychosocial support for the mother, as a woman and as the mother of an HIV-exposed or HIV-infected child.
- Community support, including referrals to community-based and faith-based programmes.
- Peer group counselling and support from health agencies or NGOs.
- Support and counselling to assist women who are HIV-infected and their partners with disclosure issues.

Faith-based support

The involvement of faith-based organizations provides HIV-infected mothers and their families with spiritual and psychosocial support. It also may provide them with an important sense of belonging to a larger community that offers them compassionate care.

Exercise 7.1 Postpartum care: Case study	
Purpose	To prepare participants to address the problems that mothers may present with during postpartum visits.
Duration	45 minutes
Instructions	<ul style="list-style-type: none"> ▪ Review Appendix 1-B: <i>WHO Clinical Staging system of HIV/AIDS for Adults and Adolescents</i>, from Module 1 ▪ Refer to the postpartum case study following this exercise in the Participant Manual. ▪ In small groups, read and discuss the case study. Identify the issues that the HCW needs to address with the client in the case study. These issues can be recorded by one member of the small group as the first column on flip chart paper. ▪ Discuss actions the HCW could take to help the client resolve these issues. These actions can be recorded as a second column on the flip chart paper. ▪ Each group will present one of the issues they addressed in the case study, and their corresponding proposed actions to resolve that issue. Other participants can discuss the proposed action. ▪ The trainer will lead a large group discussion with the following questions: <ol style="list-style-type: none"> 1. Was this case study appropriate for discussing how to conduct postpartum visits? 2. What other issues typically arise during postpartum visits? 3. What have you learned from this exercise?

Case study

Janet is a 24-year-old woman who was diagnosed with HIV during her recent pregnancy. Janet and her infant received ARV prophylaxis to prevent MTCT, according to national PMTCT guidelines. She has returned for her 28 day postpartum visit, having missed her first postpartum appointment.

Janet has chosen to exclusively breastfeed. She feels, however, that the baby is always hungry and is wondering if her breastmilk is enough; she has been giving him additional vitamins. Janet and her husband, who is also HIV-infected, would like to resume sexual relations. She has been told by her friends that she will not need to use contraception because breastfeeding eliminates her chances of getting pregnant.

Upon examination, Janet appears to be doing well. She has a 0.3 cm fissure (crack) at the base of her right nipple. There is no heat or observable sign of infection at the fissure site. Janet reports that she has been feeling more tired than usual and has about half her normal energy, but does not have any other physical complaints. She wants to know whether starting HIV medicine may help her feel better.

- *What are important issues to discuss with Janet at this visit?*

Assessment of opportunistic infections

As immune function weakens, a person infected with HIV may develop opportunistic infections. Common opportunistic diseases and infections include:

- Tuberculosis (TB)

- *Pneumocystis pneumonia* (PCP)
- Candidiasis
- Herpes zoster
- Kaposi's sarcoma
- Toxoplasmosis
- Cryptococcal meningitis

HCWs need to be able to recognise early signs and symptoms of these opportunistic infections so that they can refer patients to appropriate care.

When a patient with unknown HIV status presents with signs and symptoms of an opportunistic infection, they should be tested for HIV as soon as possible and referred to a CTC.

Table 7.1 Clinical signs/symptoms of selected opportunistic infections*	
TB	<ul style="list-style-type: none"> ▪ Persistent, productive cough (especially blood streaked), weight loss, night sweats and fever
PCP	<ul style="list-style-type: none"> ▪ Severe shortness of breath, non-productive cough, fever, chills, fatigue
Candidiasis	<ul style="list-style-type: none"> ▪ Oral (thrush): creamy white patches on a red base on posterior pharynx ▪ Oesophageal: difficulty swallowing in patients with advanced HIV disease ▪ Vaginal: white or yellow discharge with itching, burning; sometimes painful intercourse ▪ Penile: inflammation and redness on the head of the penis
Herpes zoster	<ul style="list-style-type: none"> ▪ Starts with an acute sensitivity in a band-like region of the skin on one side of the trunk, head or neck, one arm or thigh followed by bumpy reddish rash in the same band-like pattern. Later symptoms include pain, burning, itching or tingling sensation with rash developing into clustered blisters on a red base.
Kaposi's sarcoma	<ul style="list-style-type: none"> ▪ Pink-to-purple painless spots or nodules on the skin surface or in the oral cavity
Toxoplasmosis	<ul style="list-style-type: none"> ▪ The most common clinical manifestation is encephalitis, usually caused by focal brain lesions. Symptoms of encephalitis can include fever, headache, confusion, weakness, disorientation, speech disturbances, seizures, visual defects, movement disorders and personality changes.
Cryptococcal meningitis	<ul style="list-style-type: none"> ▪ Presents as severe headache with fever. The patient may report fatigue or memory problems and may also complain of nausea or blurred vision. Family members may report personality changes

* For more information on these OIs, please see Appendix 1-C: *WHO Clinical Staging System of HIV/AIDS for Children in Module 1, page 1-23.*

Co-infection with Tuberculosis or Malaria

Tuberculosis (TB)

Because of the dual epidemic of tuberculosis and HIV, it is increasingly common to see tuberculosis in women attending RCH clinics. A person infected with HIV is 10 times more likely to develop TB than a person who is HIV-negative. HIV prevalence among TB patients in sub-Saharan Africa is estimated at 60%.

Women who have symptoms suggestive of TB should have a chest x-ray, clinical evaluation and sputum examination.

Referral for evaluation of active TB should be considered in any woman presenting with the following symptoms:

- Cough that has lasted longer than 2-3 weeks
- Sputum production
- Weight loss
- Fever and night sweats
- Haemoptysis (coughing up of blood or blood-stained sputum)
- Chest pain
- Shortness of breath

Not all of the symptoms are required to refer a patient. A cough lasting longer than two-three weeks in an HIV-infected patient requires further evaluation.

Upon physical exam, a person with TB may present with:

- Tachycardia (elevated heart rate)
- Fever
- Crackles, wheezes or rhonchi heard in the lungs
- Weight loss

HCWs in RCH settings must pay close attention to signs of TB infection in their HIV-infected patients and refer them promptly for TB treatment and a CTC. TB treatment should be in accordance with the National MOHSW guidelines.

Malaria

Pregnant women are at particular risk for malaria infection and its consequences in the mother and the infant. Malaria is a major cause of anaemia in pregnant women nationally and increases the risk of severe illness and maternal death. In sub-Saharan Africa, almost 45% of pregnant women have malaria infection during pregnancy.

Women in their first and second pregnancy are at higher risk of severe or complicated malaria. Infants born to women with HIV and malaria are more likely to have low birth weight and more likely to die during infancy.

Malaria infection is often asymptomatic. However, patients may have symptomatic periods that resolve and then reoccur.

Evaluation of malaria should be considered in any woman presenting with the following symptoms:

- Fever
- Myalgia (muscle aches and pains)
- Joint pains
- Chills
- Enlarged spleen
- Mental confusion
- Abdominal pain
- Diarrhoea
- Nausea and vomiting
- Loss of appetite

On physical exam, a patient with malaria may present with:

- Tachycardia (elevated heart rate)
- Fever
- Splenomegaly
- Tender abdomen
- Fatigue and pallor

Treatment of malaria should follow the National Guidelines for Diagnosis and Treatment of Malaria.

Preventing Opportunistic and Other HIV-related Infections

Many infections can be prevented by:

- Providing medication that will act as prophylaxis to prevent the infection such as Cotrimoxazole Prevention Therapy (CPT) to prevent PCP and toxoplasmosis
- Intermittent preventative treatment with sulfadoxine pyrimethamine (SP) to prevent malaria for pregnant women
- Cleaning the body well to avoid skin infections
- Good oral care and hygiene
- Getting enough rest
- Using condoms, which can help prevent the spread of STIs
- Using insecticide-treated bed nets to prevent malaria

Cotrimoxazole Prevention Therapy (CPT)

Cotrimoxazole is an antimicrobial medication that can prevent bacterial infections and malaria as well as two important opportunistic infections, *Pneumocystis pneumonia* (PCP) and toxoplasmosis. It has been shown to reduce morbidity (illness) and mortality (death) in HIV-infected adults and children in resource-constrained settings. CPT has also been shown to decrease preterm births, chorioamnionitis and to reduce overall neonatal mortality. Use of CPT is also associated with better overall pregnancy outcomes.

Cotrimoxazole Prevention Therapy should be offered to:

- All adults with symptomatic HIV (WHO stages 3 and 4).
- Asymptomatic HIV-infected adults with CD4 cell counts <200 cells/mm³.

Women who are on CPT and become pregnant should continue CPT throughout pregnancy. However, caution should be exercised when initiating CPT during the first trimester of pregnancy and in women who may not have access to good nutrition, because cotrimoxazole can cause a deficiency in folic acid.

Pregnant women who are receiving CPT do not need sulfadoxine pyrimethamine (SP), an additional medication to prevent malaria.

Cotrimoxazole contains two different medications: 160 mg of trimethoprim (TMP) and 800 mg of sulphamethoxazole (SMX). It also goes by the name of Septrin© and Bactrim© and is sometimes referred to by an abbreviation TMP-SMX.

Suggested CPT regimen

Cotrimoxazole 960 mg daily:

- 1 double strength tablet (160 mg TMP/800mg SMX) *or*
- 2 single strength tablets (80mg TMP/400mg SMX) daily

Cotrimoxazole is generally well-tolerated. However, it should *not* be administered to patients with a history of allergy to sulfa-containing drugs. HCWs should closely monitor patients receiving CPT for side effects.

Actions for persons with suspected intolerance to CPT

STOP - with severe skin reactions (like severe rash or Stevens-Johnson syndrome), renal or hepatic insufficiency or haematological toxicity

Replace - with Dapsone 100 mg daily

Cotrimoxazole prophylaxis should be continued for life for both HIV-infected adults and children who are not receiving ARV therapy.

Malaria prevention

All women in the ANC and RCH setting should be educated about malaria prevention measures:

- Intermittent presumptive treatment for malaria (IPT) with sulfadoxine-pyrimethamine (First dose given at 20-24 weeks of gestational age and the second IPT dose should be administered at 28-32 weeks)
- Use of insecticide-treated bednets (ITN) for everyone in the family
- Other preventive measures, e.g., the use of ferrous sulphate and folic acid to prevent anaemia
- Regular screening for malaria
- Eliminating possible mosquito breeding places in and around the home

Tuberculosis prevention

All pregnant women and members of their family who have signs and symptoms of TB must be evaluated as soon as possible according to national TB guidelines. HCWs who suspect TB in a pregnant woman can work with colleagues in TB treatment to locate people who may have been exposed to active TB.

Exercise 7.2 Common infections in HIV-infected adults: Case study	
Purpose	To provide information on recognition and treatment of opportunistic infections and other common infections in HIV-infected adults.
Duration	30 minutes
Instructions	<ul style="list-style-type: none"> ▪ The trainer will divide the group into four smaller groups. Each group will be assigned one of the case studies below. ▪ Each small group will have 15 minutes to work together to answer the following questions. A recorder will write responses on a flipchart. <ol style="list-style-type: none"> 1. Read their assigned case study 2. Identify the infection based on clinical presentation of symptoms. 3. Determine if prophylaxis or prevention could have minimised this risk of this infection 4. Make suggestions for treatment ▪ Each small group will have 5 minutes to present their case study and suggestions for treatment to the larger group. The trainer will lead a discussion on the issues of infection in HIV-infected adults.

Case studies: Common infections in HIV-infected adults

Case Study 1

Kabula, who is in her second trimester of pregnancy, has arrived at the local STI clinic with complaints of vaginal itching; a thick, white, curd-like discharge (non-odorous) and burning on urination. She has had these symptoms for more than a week. On history and examination, she reports no lower abdominal pain or tenderness.

Case Study 2

Amina was diagnosed with HIV last year. She comes to the CTC very infrequently and takes no medications stating that she feels "fine" most of the time. Her last visit was four months ago. Today she has arrived feeling short of breath. She says that work has been busy and

she's been feeling more and more tired. She reports having had a dry cough for two weeks now and she suspects that she's running a fever for the last few days.

Case Study 3

Maimuna has returned to the ANC clinic after just completing her first trimester of pregnancy. She is HIV-infected. She thought she would be over "morning sickness" by now, but she is feeling worse than ever. In addition to simple nausea and loss of appetite, she is complaining of "chills", general weakness and joint pains. She wonders if it's because she is anaemic.

Case Study 4

Timothy, recently diagnosed as HIV-positive, came with his wife to her ANC appointment. He complains to you of fatigue and increasing bouts of pain, burning and itching along the left side of his back. He says these symptoms were mild a week or so ago and have now spread to the left side of his chest as well. He can't see anything there, but it seems to be getting worse and he can't imagine what it is.

UNIT 2 Follow-up Care and Support of the Infant and Young Child Exposed to and Infected with HIV

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the components of ongoing care of HIV-exposed or HIV-infected infants and children.
- Understand HIV testing guidelines for infants and children.
- Understand how to prevent opportunistic infections, including malaria, in infants and children.

Care of HIV-exposed Infants

PMTCT interventions reduce, but do not eliminate, the risk of HIV transmission from mother to infant. Regardless of whether PMTCT-related ARV prophylaxis was administered to mother and/or infant, regular follow-up care is critical for an infant born to a mother with HIV.

Timing of follow-up visits

HIV infection increases an infant's risk of illness and failure to thrive. Because HIV disease can progress extremely rapidly in perinatally-infected infants, close monitoring and regular visits are important. The newborn should be seen in the healthcare facility or at home within two weeks of delivery or sooner to monitor feeding progress.

For all infants and children, subsequent visits should be scheduled to coincide with the immunisation schedule indicated on the Road to Health Card.

- At birth (for infants delivered at home)
- At ages 4, 8 and 12 weeks
- Once a month from 12 weeks to 1 year
- Quarterly from 1 to 2 years
- At 18 months for confirmatory HIV testing with antibody tests if diagnosis has not been established already

Early detection and definitive diagnosis of HIV infection is very important in infants. It is possible for HIV-infected children to die of their disease before they are diagnosed. Therefore, it is important that the HCW strongly encourage mothers to seek medical care whenever an HIV-exposed infant or child becomes ill or the mother suspects a problem.

Immunisations

National guidelines outline specific immunizations at specific times for all infants and children. More information can be found in Appendix 7-C: *Additional Information on National Immunisation Schedule According to the EPI Programme*.

Age of Infant	Vaccine
Birth	BCG*, 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 = Bacille Calmette Guerin

OPV = oral polio vaccine

DPT-HBV = combined diphtheria, pertussis, tetanus and hepatitis B vaccine

* BCG and measles vaccine should be given to **all children** *except* those children with symptoms of advanced HIV/AIDS.

Guidance on infant feeding

At each postpartum visit, workers should assess and support a mother's choice about infant feeding as discussed in *Module 6, Infant Feeding in the Context of HIV Infection*.

Discussions about infant feeding are especially important in the early months of life and as new foods are introduced.

A mother knows she is feeding her infant adequately when:

- Infant gains weight **and**
- Infant urinates 6 to 8 times in a 24-hour period **and**
- Infant has at least 2 to 5 bowel motions in a 24-hour period (there is substantial variability)

For an older child who is well, leaving food on a plate after a meal can be a sign of adequate intake. For details on infant nutritional requirements in the first 6 months of life, please see *Module 6 Infant Feeding in the Context of HIV Infection*.

Vitamin A supplementation

Studies show vitamin A reduces illness and death in children and adults. All infants should receive vitamin A supplementation. The national vitamin A supplementation schedule is as follows:

Mother directly after delivery	200,000 I.U.
Formula fed infants only, below 6 months	50,000 I.U.

All infants:

At 9-12* months	100,000 I.U.
At 15-18 months	200,000 I.U.
At 21-24 months	200,000 I.U.

*Timing should correspond with measles vaccination.

Additional follow-up visits for HIV-exposed/infected infants and children should include:

- Starting cotrimoxazole preventive therapy at 4 weeks or as soon as possible
- Teaching about how to prevent malaria including use of insecticide-treated bed nets
- Treating anaemia per national guidelines
- Assessing a mother's health and making appropriate referrals for follow-up care, because the health of a mother and her child are closely related.

Growth faltering (Growth failure)

Growth failure is one of the key presentations of HIV infection. Before the era of HIV, the link between malnutrition and immunosuppression was well-recognised. There is evidence that nutritional status is directly correlated with the survival of the HIV-infected child.

Growth monitoring

Growth charts track height, weight and height for weight measurements on a normal curve for a child's age. At each follow-up visit, HCWs should measure and plot the weight and height of children on the Road to Health Card.

Regular growth monitoring is important because poor growth is a frequent sign of HIV infection and can be one indication of ARV therapy failure in children. HIV-related growth failure tends to be proportional, so weight-for-height measurements may be normal and some children may not appear wasted.

Growth is related to diet, health of the mother and child, genetics and the environment. Most RCH programmes focus on child growth in the first five years of life. This is the period of most rapid growth and development. It is also the time when children are most vulnerable to malnutrition. Weight is the most commonly measured growth parameter. Conditions that are related to weight loss include underlying infection, acute diarrhoea and HIV-related growth failure.

Common signs and symptoms of HIV infection in infants

An infant born to a mother who is HIV-infected and presents with symptoms of illness should be assessed using the IMCI guidelines. The signs, symptoms, and conditions most commonly associated with HIV infection in infants are

- Low weight and/or growth failure
- Recurrent pneumonia, including PCP
- Oral candidiasis (thrush)
- Lymphadenopathy
- Parotid gland swelling
- Recurrent ear infections
- Persistent diarrhoea
- TB

HCWs should teach mothers and other caregivers to recognise early signs of these conditions and to seek early medical care for the infant/child.

Interventions to relieve symptoms, such as oral rehydration for acute diarrhoea, nutritional interventions to promote weight gain, PCP prophylaxis and screening for TB are important strategies for improving the health of infants and children who are HIV-infected.

Table 7.2 Clinical conditions or signs of HIV infection in a child who is HIV-exposed	
Is symptom specific to HIV?	Signs and conditions
Common in children who are HIV-infected; also seen in ill, uninfected children	<ul style="list-style-type: none"> ▪ Chronic, recurrent otitis media with discharge ▪ Persistent or recurrent diarrhoea ▪ Failure to thrive (slow growth) ▪ Tuberculosis

Table 7.2 Clinical conditions or signs of HIV infection in a child who is HIV-exposed	
Common in children who are HIV-infected; uncommon in uninfected children	<ul style="list-style-type: none"> ▪ 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 ▪ Neurologic dysfunction ▪ Herpes zoster (shingles), single dermatome ▪ Persistent generalised dermatitis unresponsive to treatment
Specific to HIV infection	<ul style="list-style-type: none"> ▪ PCP ▪ Oesophageal candidiasis ▪ Lymphoid interstitial pneumonitis (LIP) ▪ Herpes zoster (shingles) with multidermatomal involvement ▪ Kaposi's sarcoma

Key differences between HIV-infected adults and HIV-infected children

- A young child's immune system is immature, so children are more susceptible to common and opportunistic infections.
- It is common for some infants to be critically ill early in life with rapidly progressing disease.
- It is more difficult to diagnose a child with HIV than an adult.
- Children at any age who are breastfed are at risk of acquiring HIV. However, breastfeeding also protects the child from other infections.
- CD4 counts are not as useful a diagnostic tool in infants and young children. Normal CD4 counts in children are higher than they are in adults but decrease with age. It is best to use CD4% as a marker of HIV disease progression in children because this measure is more stable.
- Children's bodies handle ARV medications differently than adults.

Exercise 7.3 Clinical presentation of HIV in infants and children: Small group discussion	
Purpose	To familiarise participants with the signs and common symptoms in infants and children who are HIV-infected.
Duration	25 minutes
Instructions	<ul style="list-style-type: none"> ▪ Review Appendix 1-C: <i>WHO Clinical Staging of HIV/AIDS for Children</i> from Module 1 and Table 7.2. ▪ The trainer will lead a group discussion on the symptoms and signs of HIV infection in infants and children. ▪ Participants will be divided into small groups. Each small group can discuss and identify a common symptom or condition that they have encountered in infants and children in their clinical settings. ▪ Each small group should answer the following questions. Refer to Table 7.2 as needed. <ol style="list-style-type: none"> 1. Is this symptom suggestive of HIV 2. What else could this symptom indicate? 3. How would they explain these symptoms to a mother ▪ After 15 minutes, a volunteer from each group will be asked to provide a symptom

Diagnostic testing of HIV-exposed infants and young children

Diagnostic services for HIV-exposed infants and young children are an important part of follow-up care. *Figure 7.1 provides the national antibody testing algorithm for children 18 months and older nationally.*

Earlier diagnosis of HIV infection in infants exposed to HIV is difficult in resource-constrained settings. Because maternal antibodies cross the placenta, all infants born to mothers infected with HIV will test antibody positive at birth, regardless of their own infection status. Because maternal antibodies persist in the infant's system, antibody testing prior to 18 months is difficult to interpret. However, antibody tests can be useful in determining whether a sick child less than 18 months old has been exposed to HIV if their mother's status is unknown. Although not commonplace, some healthcare facilities may choose to use antibody tests, starting at 9 months of age, in order to identify those children who need follow-up viral testing.

National guidelines recommend that antibody testing be used for HIV diagnosis of a child beginning at 18 months of age when maternal antibodies are no longer present. No child under 18 months of age should be given a diagnosis of HIV infection based on an HIV antibody test. Viral tests are the preferred method of testing infants. However these tests are expensive and not widely available nationally at this time.

As in adult HIV testing, the first positive antibody rapid test must be confirmed with a second rapid test for a definitive diagnosis at 18 months or as soon as possible thereafter.

As long as HIV-infected mothers breastfeed, their infants are at risk of becoming infected. This further complicates HIV testing of infants. In order for a negative HIV test result to be

accurate, the test must be performed at least 6 weeks after breastfeeding has stopped completely.

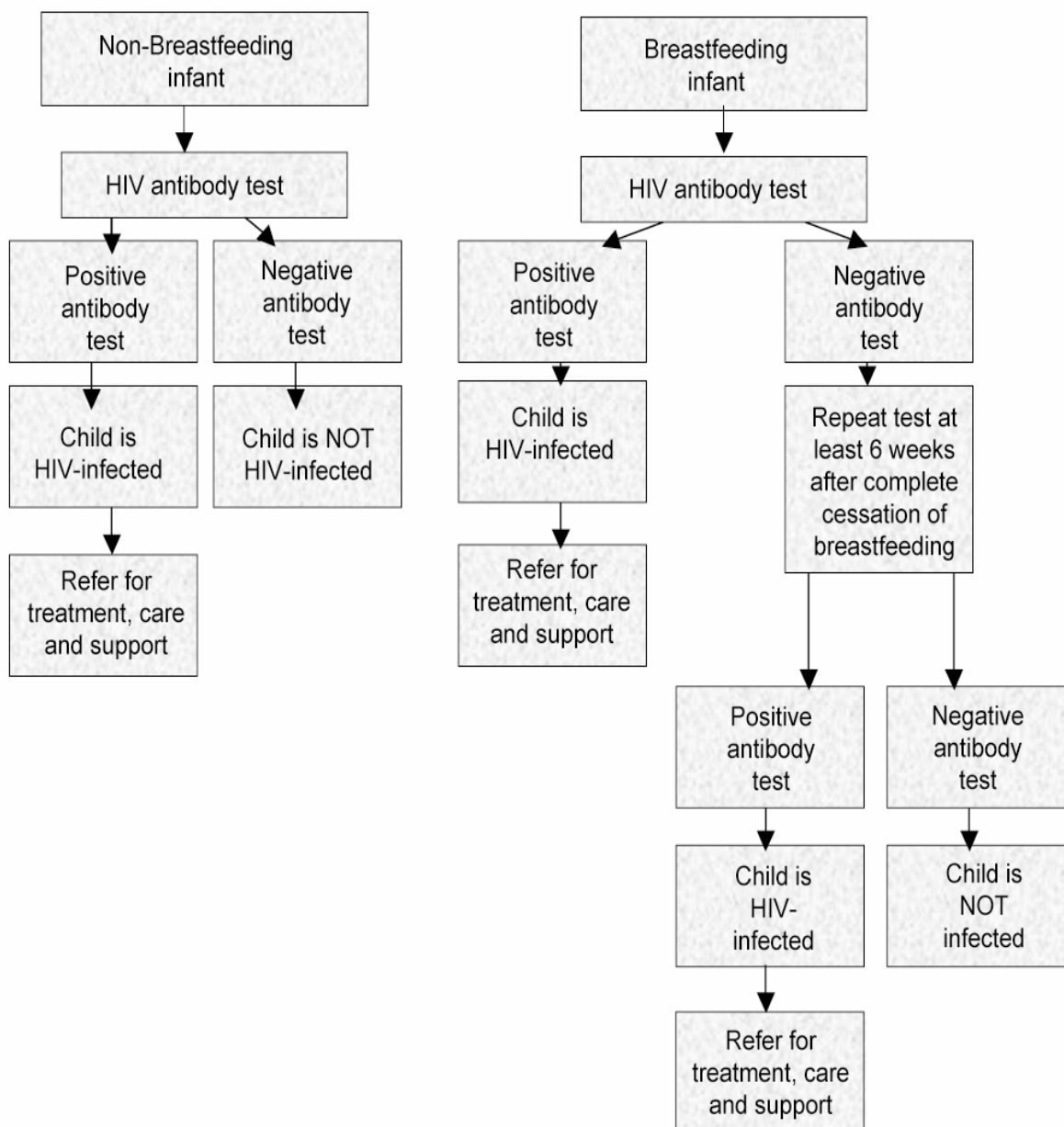
For children who are *not breastfeeding* or where breastfeeding has ended at least 6 weeks prior:

- A negative HIV antibody test result for a child 18 months or older indicates that the child is uninfected.
- A *confirmed* positive HIV antibody test at 18 months or older indicates the child is infected with HIV.

For children who are *breastfeeding*:

- If the HIV antibody test is negative at 18 months of age or older and the infant was breastfeeding in the last 6 weeks, the antibody test should be repeated 6 weeks after breastfeeding has stopped completely.

Figure 7.1 HIV diagnosis using antibody tests in children 18 months and older

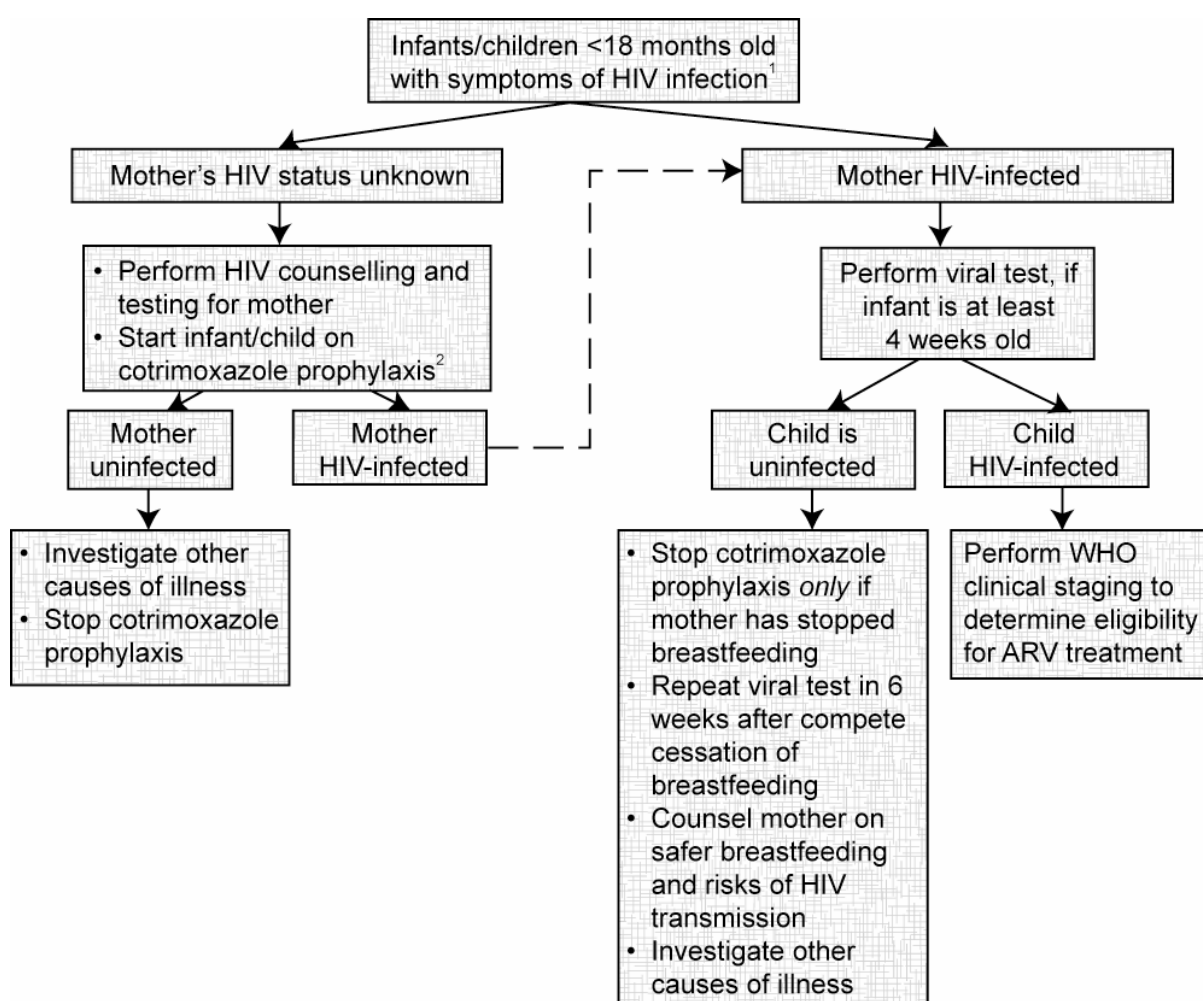


Viral Tests

Viral tests, like HIV DNA-PCR, detect the actual virus (not the antibody to the virus) so they can be used to diagnose HIV infection at a much earlier age than the antibody test. In Tanzania, viral tests are used to confirm the suspicion of HIV infection in already symptomatic children who are less than 18 months of age. Nationally, viral tests can be used as early as 4 weeks of age. The PCR test is now available at some certified CTCs and should be used by trained HCWs when available.

Like all HIV tests, viral tests should be performed 6 weeks after complete cessation of breastfeeding in order to be accurate. A viral test should be performed at the second MCH visit (eight weeks post delivery).

Figure 7.2 HIV testing by PCR for infants and children less than 18 months of age



¹ See the WHO clinical staging system for children in Module 1 Appendix 1-C

² Cotrimoxazole prophylaxis is started as early as 4 weeks of age in ALL HIV-exposed infants and in infants where you suspect HIV infection

Presumptive Diagnosis of Infants with HIV Infection

If an infant is <18 months old, has symptoms that are suggestive of HIV infection and there is no viral testing available, it is possible to make a presumptive diagnosis. At present, the

majority of infants and children less than 18 months of age in Tanzania are diagnosed on the basis of symptoms of HIV infection and a positive antibody test of the mother.

Using symptoms to guide diagnosis of HIV should be followed by efforts to confirm the diagnosis using the best available tests for age.

Presumptive diagnosis of a severe HIV infection should be made if the child has/is:

- A) Confirmed positive HIV antibody test^a
and
- B) Diagnosis of any AIDS-indicator condition(s)^b
or
- C) Symptomatic with two or more of the following:
 - Oral thrush^c
 - Severe pneumonia^c
 - Severe sepsis^c

Other factors that support 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% less than 20%

An HIV diagnosis in children older than 18 months should not be made on the basis of symptoms. In children older than 18 months, symptoms suggestive of HIV infection are an indicator of an urgent need to conduct antibody testing.

^a While HIV antibody tests are difficult to interpret for children under the age of 18 months, when accompanied by these other symptoms, the antibody test can be used to form the presumptive diagnosis of HIV.

^b AIDS indicator conditions include some but not all HIV paediatric clinical stage 4, such as pneumocystis pneumonia, oesophageal candidiasis, cryptococcal meningitis, cerebral toxoplasmosis, HIV wasting and Kaposi's sarcoma.

^c As defined by the Integrated Management of Childhood Illness (IMCI)

Support for families with HIV-infected infants and children

The suspicion or confirmation of HIV diagnosis in an infant or child is difficult for the parents. HCWs should discuss the diagnosis compassionately and confidentially and offer information about services available for the child. A guide on counselling parents whose children have been diagnosed with HIV infection can be found in Appendix 7-D: *Talking with Parents about Their Child's HIV Positive Test Result*. HCW should assess the need for the following services and refer their patients to them as appropriate:

- Nutritional support
- Psychosocial support
- Educational support
- Financial support
- Faith-based support
- Transportation
- Home-based care
- Orphan care – care for child if a parent becomes severely ill, is incapacitated or dies.

Exercise 7.4 HIV Diagnosis of infants and young children: Case studies	
Purpose	To reinforce understanding of HIV diagnosis of infants and children using antibody tests.
Duration	25 minutes
Instructions	<ul style="list-style-type: none"> ▪ Participants will be divided into three groups and assigned one case scenario concerning HIV diagnosis; in each scenario, the mother is HIV-infected. Refer to the case studies below. <ul style="list-style-type: none"> ▪ Each group will address the specific question asked in its case study, and provide addition suggestions if possible. Refer to Figure 7.2 for guidance. ▪ After 10 minutes, a volunteer from each group will be invited to read the case scenario, the question that was asked, and the answer that the group provided. ▪ The trainer will lead large group discussion on the answers provided for the case studies and additional issues.

Case studies

Case study 1

Malia has come to the RCH centre for routine immunisation of her son. He is now 8 months old, healthy, gaining weight and being fed formula and complementary foods. Viral tests are not available at your clinic. Malia asks you:

“Can I get my son tested for HIV today?”

Case study 2

Elizabeth has been breastfeeding her infant since birth because she found that this was the safest option for her. Once her daughter reached 18 months of age, Elizabeth stopped breastfeeding. Two weeks later she took her daughter for antibody testing. Elizabeth was so pleased until they suggested that she return for a repeat test in four weeks. She asks you:

“Why do I have to come back? I am not breastfeeding anymore.”

Case study 3

Reem exclusively breastfed her son until 6 months of age. At that time, she stopped breastfeeding completely and started replacement feeding with formula as suggested by the clinic. Her son is now 18 months old and she has come in to have him tested. Her son’s confirmatory HIV test is positive. She is asking you:

“Can this test result be a mistake? Is it possible that my son is not HIV-infected?”

Prevention of *Pneumocystis pneumonia* (PCP) infection

Pneumocystis pneumonia (PCP) is a leading cause of death in young infants with HIV. PCP often strikes infants between the ages of 3–6 months old, long before they can be tested for HIV. Cotrimoxazole has been shown to reduce morbidity (illness) and mortality (death) in HIV-infected patients—both adults and children.

For HIV-exposed children

Every infant born to an HIV-infected mother should receive Cotrimoxazole Preventive Therapy (CPT) to prevent PCP, beginning at 4 weeks or as soon as possible.

This should be continued until the child is proven to be HIV negative *and* the mother has stopped breastfeeding completely.

For HIV-infected children, CPT should be given to:

- All HIV-infected infants <12 months old.
- All HIV-infected children between the ages of 1 and 4 years old, who have clinical signs or symptoms suggestive of mild, advanced, or severe HIV disease (WHO Stage 2, 3, and 4).
- All children older than 12 months of age whose CD4 percent is less than 15%.
- All HIV-infected children >5 years old should start or continue CPT according to adult guidelines.

For any child with presumptive symptomatic HIV disease, CPT should be started at any age and continued until HIV status is confirmed negative and there is no risk of transmission through breastfeeding.

If ARV therapy is not available for an HIV-infected child, cotrimoxazole prophylaxis should be continued indefinitely. Baseline liver and renal function tests are required before long-term administration of cotrimoxazole. Cotrimoxazole (CTX) contains two different medications: trimethoprim (TMP) and sulphamethoxazole (SMX) (abbreviated TMP-SMX).

Side effects

Cotrimoxazole is generally well tolerated. The most common side effects are gastrointestinal (nausea, vomiting, 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, Dapsone is the best alternative.

Dosing of CPT for infants and children

Like most medications given to children, the dosing will change according to a child's age and sometimes their weight.

Table 7.3 Cotrimoxazole formulation and dosage for HIV-exposed or HIV-infected children

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

Source: WHO. *Guidelines for Cotrimoxazole Prophylaxis for HIV-related Infections in Children, Adults and Adolescents in Resource Limited Settings. Recommendations for a Public Health Approach*. Available at: <http://www.who.int/hiv/pub/guidelines/ctx/en/index.html>

Exercise 7.5 Cotrimoxazole Preventive Therapy for infants/children: Case study	
Purpose	To help participants understand how to dose CPT in various case studies.
Duration	20 minutes
Instructions	<ul style="list-style-type: none"> ▪ Refer to the three case studies below. Answer the case study questions as a group ▪ Discuss why it is important to give Cotrimoxazole Preventative Therapy (CPT) before an infant's HIV status is known.

Exercise 7.5 Cotrimoxazole Preventive Therapy: Case study

Case Study 1

An elderly woman brings her 10 month old grandson to your hospital, which also houses a CTC. She tells you that both of the infant's parents have died recently after a "long illness". She says the child has always been sickly and small for his age but lately has developed a very bad cough and diarrhoea which has lasted for 2 weeks. The child was treated for his diarrhoea and given medicine for his cough at the Under 5 clinic but the cough worsened. She tells you that she is worried that the infant may have the same illness as his parents. Upon initial examination the child is found to have oral candidiasis and the chest x-ray that you order to evaluate the infant's cough shows a right lower lobe pneumonia.

- *Is there evidence of HIV infection?*
- *Do you start CPT for the child?*
- *If so, at what dose?*
- *What else should be done at this visit?*

Case Study 2

Baby Rose is 8 weeks old and is brought into your Under 5 clinic for immunisations. Her mother is HIV-infected and received nevirapine prophylaxis during labour. Rose also received nevirapine prophylaxis at birth and has been exclusively breastfed. When asked, the mother says that she has already gone to the CTC to register herself and her child for further HIV care.

- *What dose of cotrimoxazole should you give the infant today?*
- *What else should be done at this visit?*

Case Study 3

Asad was perinatally infected with HIV. Today, he is here for his 6-year old check up. He has been on CPT since he was 1 year old. He has been relatively healthy except for mild nausea and anaemia that he experienced when he first started ARV therapy two years ago. You notice his dose of cotrimoxazole is listed on his Child Health Card as 5ml of suspension.

- *What do you need to do at this visit?*

Summary: Promoting health through follow-up

HCWs should conduct the following activities during follow-up visits:

- Assess for common illnesses and manage appropriately as directed by the *Integrated Management of Childhood Illness* (IMCI) guidelines.
- Look for non-specific symptoms or conditions that could be related to HIV infection using the HIV-adapted IMCI algorithms.
 - Screen for TB and treat if indicated.
- Perform HIV testing in accordance with national guidelines.
- Provide vitamin A in accordance with national guidelines.
- Provide CPT for prevention of PCP and other bacterial infections.
- Assess and support the mother's infant feeding choice.
- Monitor the child's growth and assess causes of growth failure. Infants who fail to grow require referral to the CTC and Under 5 clinics.
- Immunise according to the national guidelines.
- Advise the use of insecticide-treated bed nets to prevent malaria. Offer malaria treatment according to national guidelines.
- Treat anaemia as indicated based on national guidelines.

Because the health of mother and child is so closely related, HCWs should assess maternal health and nutrition when they are assessing the infant. Appropriate referrals for maternal care should be given during infant checkups.

UNIT 3 Antiretroviral Treatment for HIV-Infected Women and Children

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe the criteria for initiating ARV therapy for adults and children.
- Recognise the most common side effects of ARV medications used for ARV treatment nationally
- Assess when HIV-infected mothers and children should be referred to care and treatment clinics (CTC).

ARV therapy

ARV therapy for women who are HIV-infected is increasingly available in Tanzania and is being provided through certified CTCs. Women initially followed in PMTCT settings should be referred to CTCs for ARV therapy services for themselves and their families.

Combining ARV medications to reduce the HIV viral load as much as possible—and for as long as possible—is the standard of care for HIV treatment. A combination of three or more ARV medications, often referred to as highly active antiretroviral therapy (HAART), slows replication of HIV.

The advantages of combination ARV therapy are:

- Improved health status of the patient
- Reduced HIV-related illness (morbidity)
- Reduced HIV-related hospitalisations
- Reduction in number of deaths from AIDS (mortality)

The role of RCH healthcare workers in supporting ARV therapy

As ARV therapy becomes more widely available, HCWs in RCH facilities should have the following skills and knowledge:

- Clear understanding of when to refer women and their families to CTCs
- Sufficient background and knowledge to assess the need for ARV therapy referral for their patients
- Ability to discuss the basic principles of ARV therapy with women receiving RCH services
- Ability to care for a patient who is on ARV therapy and receiving RCH services
- Ability to establish effective communication and linkages between RCH and CTCs
- Understanding of the importance of adherence to ARV therapy and the ability to provide adherence counselling to patients and their families

Referrals for HIV care and treatment through CTCs

ARV therapy is now widely available nationally through CTCs. There are two possible referral scenarios that link RCH patients to CTCs. The choice of how to refer patients will depend upon the capacity of the health facility to perform the duties outlined.

PMTCT site refers to CTC:

- Determination of HIV status is performed within the PMTCT programme and patient is referred to the CTC for clinical staging, determination of eligibility for ARV therapy and CD4 count

- Determination of HIV status is performed within PMTCT programme which *also* performs clinical staging and CD4 count and *then* refers for further evaluation and determination of eligibility for ARV therapy by the CTC

PMTCT site is also an ARV care and treatment site (CTC):

In this scenario, a complete CTC team is established within ANC. The ANC and CTC team collaborate on a patient's care. This scenario requires:

- Prior site assessment
- Training of HCWs in ARV care and treatment
- Full staff, including clinician/prescribers, counsellors, home-based care providers (HBCs) and a treatment nurse

Basic Facts about Antiretroviral Treatment

There are some basic facts about ARV therapy that HCWs should be aware of in order to better counsel their patients who are receiving treatment:

ARV therapy does not cure HIV
ARV medications 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 it to recover. If ARV therapy is stopped, HIV disease progression occurs more rapidly.
Always use 3 different ARV medications for treatment
HCWs should only use regimens 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. While mono- or dual-therapy (1 or 2 ARV medications) can be used for short term prophylaxis against MTCT of HIV, HCWs should not prescribe mono- or dual-therapy for long-term ARV therapy.
ARV medications must be taken every day as directed
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 (change). These changes (mutations) can make the virus resistant to ARV medications. When resistance develops, ARVs don't work as 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. <i>Therefore patient adherence is crucial to the effectiveness of ARV therapy.</i> ARV therapy 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 and trained HCW
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, while other combinations do not. Certain ARV medications are safe in pregnancy while others are not. See Appendices 7-F: <i>National ARV Regimens for Adults and Children</i> and Appendix 7-G: <i>Conducting a PMTCT Health Education Session</i> for more information.
Other medications will interact with ARV medications
Patients should avoid the use of other medications that could reduce the concentration of ARVs in the blood. HCWs should closely monitor all traditional and non-traditional

medication taken by patients for possible interactions. For more information on some common interactions that can occur with ARV therapy, see Appendix 7-E: Information about Antiretroviral Medicines.

The 3 classes of ARV therapy

ARV medications slow the reproduction of HIV, and thereby reduce the viral load in a patient's body. ARV medications are divided into categories based how they stop the virus from reproducing. The table in Appendix 7-E: *Information about Antiretroviral Medicines* summarizes the 3 types (classes) of ARV medications available nationally.

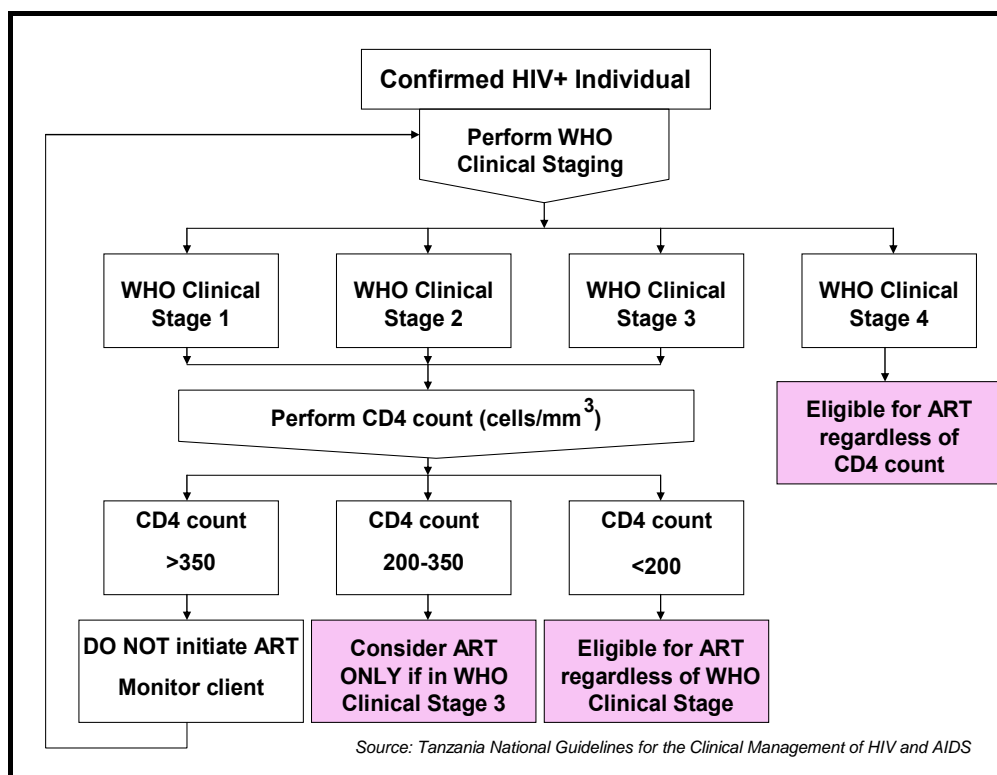
Clinical criteria for commencing ARV therapy in adults and adolescents

The *National Guidelines for the Clinical Management of HIV and AIDS* contain the WHO clinical staging system for HIV-Infected Adults and Adolescents (see Module 1 for review), as well as guidelines for commencement of ARVs as follows:

Clinical criteria for Commencing ARV therapy in adults and adolescents
<ul style="list-style-type: none"> ▪ Confirmed HIV infected AND
<ul style="list-style-type: none"> ▪ CD4 count less than 200 cells/mm³ regardless of WHO Clinical Stage OR ▪ WHO Clinical Stage 3 with CD4 count less than 350/mm³ OR ▪ WHO Clinical Stage 4 regardless of CD4 count

The decision-making process for initiating ARV therapy in adults is summarised in Figure 7.3.

Figure 7.3 Clinical Criteria for Commencing ARV therapy in Adults and Adolescents



The following are severe signs and symptoms of opportunistic infections that require the attention of a healthcare provider at a CTC:

- Chronic diarrhoea
- Painful or difficulty swallowing
- Weight loss of more than 10% of body weight
- Trouble breathing/shortness of breath which may indicate TB
- Persistent fever of unknown origin

National first-line ARV treatment regimens

Nationally, pregnant women are started on a different ARV therapy regimen than other adults.

Women of childbearing potential OR pregnant women will start ARV therapy on
Zidovudine (AZT) + Lamivudine (3TC) + Nevirapine (NVP)

All other patients are started on a fixed-dose combination (FDC).

Unless contraindicated, all patients nationally will start ARV therapy on
Stavudine (d4T) + Lamivudine (3TC) + Nevirapine (NVP)

However, non-pregnant patients with special circumstances can be started on different first-line medications or switched to them if necessary. HCWs in RCH should be familiar with other first line regimens for patients with specific problems that are listed below:

Patients who develop peripheral neuropathy (numbness and tingling of the feet)

- Zidovudine (AZT) + Lamivudine (3TC)+ Nevirapine (NVP)

Patients who develop TB and anaemia (defined as Hgb <7.5gm/dl)

- Stavudine (d4T) + Lamivudine (3TC) + Efavirenz (EFV)

Patients who develop TB but do not have anaemia

- Zidovudine (AZT) + Lamivudine (3TC) + Efavirenz (EFV)

More details on the first and second line ARV therapy regimens for adults and children and how to manage them are provided in Appendix 7-F: *National ARV Regimens for Adults and Children*.

Antiretroviral treatment and tuberculosis co-infection

Tuberculosis is a common entry point for HIV-infected patients who should be on ARV therapy, including pregnant women. Nationally, HIV prevalence is approximately 33.8% among TB patients¹. Several anti-tuberculosis regimens can be administered with effective ARV therapy in HIV-infected persons, while others cannot. Rifampicin, a potent drug used in the treatment of TB, interferes with the metabolism of NVP and decreases its effectiveness. Rifampicin and NVP, when used together, can also be toxic to a patient's liver and should not be used at the same time. This restriction does **not** apply to the use of single-dose NVP used to prevent MTCT during labour and delivery.

ARV regimens for TB patients should be modified as necessary or, when possible, HCWs should wait until TB treatment has been completed before initiating ARV therapy.

¹ WHO. June 2005. Summary Country Profile for HIV/AIDS Treatment Scale-Up.

- Nationally, the first line regimen of ARVs for patients who are also being treated for TB is (AZT or d4T) + 3TC + EFV.
- EFV must be avoided in the first trimester of pregnancy because it may cause birth defects. Other ARV medications (ABC or SQV/r) should be substituted until the woman is well into her second trimester. Reliable contraception must also be used in the postpartum period if EFV is continued past delivery.

Health facilities that treat tuberculosis should have strong linkage and referral systems with CTCs.

Challenges to the management of TB in HIV-infected persons

Among the challenges to the management of TB and HIV nationally are

- Compliance with long-term medication regimens that have side effects
- Drug interactions with some first-line ARVs
- Following-up patients on long term regimens
- Cost associated with long-term regimens and care

HCWs should work to link HIV-infected patients with TB treatment. TB treatment programs should also have a strong connection to HIV programmes like PMTCT and CTCs. Referral systems and linkages need to be established with key national health programmes to reduce the burden on patients, their families and HCWs.

Pre-ARV therapy consultation

All HIV-infected patients must undergo a complete assessment visit at a CTC before beginning ARV therapy. During these visits HCWs ensure that the patient meets the clinical criteria for starting treatment and assess the patient's readiness to begin treatment.

Pre-ARV therapy requirements
<ul style="list-style-type: none"> ▪ Treatment of existing OIs ▪ Initiation of CPT ▪ Assessment of adherence to CPT and scheduled visits ▪ Adherence counselling and orientation to ARV therapy for patient and a family member ▪ Medical consultation ▪ Laboratory testing (liver and renal function, haemoglobin)

Promoting adherence

Patient adherence to ARV therapy is critical to its success. ARV therapy requires close monitoring and consistent support in order to promote good treatment outcomes and improve quality of life. HCWs should discuss and assess ARV side effects with patients and refer them to a CTC when needed so that side effects can be managed promptly. Appendix 7-E: *Information about Antiretroviral Medicines* has a list of common side effects from the ARVs used nationally. The following suggestions can help to support ARV tolerance and improve adherence:

Measures to increase adherence to ARV therapy

Educate Patients

- Make sure that the patient knows that ARV therapy is not a cure and that it requires a long-term commitment.
- Review each medication in the ARV regimen with the patient.

Measures to increase adherence to ARV therapy

- Assist the patient in planning a dosage schedule that works for him or her.
- Remind patients of food restrictions (if any exist).
- Help patients understand that ARV medications only work if they are taken everyday as directed.

Assess and give guidance on adherence

- Monitor for adherence through pill counts and encourage patient to bring all medications to appointments.
- Provide simple written information, diagrams or pictures on when to take medications.
- Encourage the patient to disclose their HIV status to at least one friend or family member who knows about their ARV therapy and can remind them to take their medication.
- Invite family and/or friends to attend adherence counselling.

Help patients understand and manage side effects

- Discuss common side effects of medication and how to manage them before they occur (See Appendix 7-E: *Information about Antiretroviral Medicines* for information on how to manage common side effects of ARV medications).
- Differentiate between short-term side effects of medication that will resolve or can be managed simply and emergency symptoms that require immediate medical attention e.g., shortness of breath.

Work with other organisations/care and CTCs

- Work with the local CTC to understand how to report side effects of ARV medications.
- Help patients understand that they have to attend CTCs on a regular basis.
- If possible, encourage the patient to join HIV support groups if they are available.
- Keep organised appointment records for patients attending CTCs.

Treatment failure

There are three types of treatment failure: clinical, immunologic and viral. Assessing immunologic and viral failure requires laboratory measurements like a CD4 count that are done at a CTC. However, it is possible to assess for treatment failure by looking at a patient's symptoms.

There are often several reasons for treatment failure, including poor adherence, insufficient drug levels and inadequate drug potency. *Non-adherence is the most common cause of treatment failure.*

Clinical failure

Using the WHO clinical staging system, HCWs should be able to make a preliminary determination of whether the ARV treatment regimen has failed. It is possible to detect treatment failure by assessing patient symptoms. When a patient is on ARV therapy and still has symptoms, it may mean that ARV drugs are no longer working effectively. However, ARV medications require a reasonable amount of time to take effect, usually between 6 to 12 months. HCWs should first assess adherence to ARV drugs and work with the patient to address barriers to adherence. This may include:

- Asking the patient about side effects.
- Asking the patient whether they are taking other drugs which can interact with ARVs, including home remedies or traditional therapies.
- Asking the patient if she is having difficulty remembering to take the medication.
- If the patient has given permission to the HCW to speak with family members, ask family members if there are additional reasons the patient is having adherence problems.

If the patient has been on ARV therapy for an adequate time period and is taking all of the ARV medication prescribed for her and she still has symptoms, the HCW should refer the patient back to the CTC, where an experienced HCW can determine whether he or she needs to change the patient's ARV treatment regimen.

HCWs should use the WHO clinical staging system as a tool for detecting possible clinical failure.

- New or recurrent Clinical Stage 4 or 3 symptoms or infections after 6 months of ARV therapy may suggest treatment failure.

See Module 1, Appendix 1-B and 1-C for the *WHO clinical staging system*. Clinical events in the first three months after starting ARV therapy may be caused by immune reconstitution syndrome (IRS) rather than clinical treatment failure.

Immune reconstitution syndrome

Immune reconstitution syndrome is an inflammatory response to a previously undetected infection that becomes reactivated when a patient is started on ARV therapy and the immune system is strengthened. IRS usually occurs a few weeks after the start of ARV therapy in a patient who was severely ill when started on treatment. IRS does not mean that a patient has failed treatment. The infection, usually an OI, should be treated according to national guidelines and the ARV therapy should be continued.

Treatment referral

HCWs should refer patients back to the care and treatment clinic (CTC) under the following circumstances: :

- When an HIV-infected patient shows signs and symptoms of disease progression.
- When an HIV-infected patient who is receiving ARV therapy:
 - Shows signs of a serious side effect or adverse reaction to an ARV medication
 - Is prescribed new (non-ARV) medications
 - Shows signs of poor adherence to ARV therapy

Delaying treatment

There are several reasons why HCWs in CTCs may choose to delay starting ARV therapy in HIV-infected patients. However, these reasons should not delay a referral to the CTC in order to make the determination.

A HCW in a CTC may choose to delay ARV therapy if:

- The patient is not eligible for treatment. She has a CD4 count greater than 350 cells/mm³ and there are no clinical symptoms of disease progression.
- The patient has demonstrated poor adherence, despite HCWs best attempts to conduct counselling and provide support for taking ARV therapy.
- The patient refuses to give consent for treatment or does not want treatment.
- The patient is in the first trimester of pregnancy. (HCWs should only delay treatment if the risks of treatment outweigh the benefits. EFV should be avoided in the treatment regimen.)
- There is laboratory evidence that the patient has kidney, bone marrow or liver failure
- The patient is receiving concurrent treatment for TB. In this case, HCWs will usually delay ARV therapy until the intensive phase of TB treatment with rifampicin is complete. However, if the patient has advanced symptoms or severe immune suppression, HCWs will start ARV therapy. Either way, the patient will require an immediate referral for evaluation at the CTC in order to make these decisions.

Antiretroviral treatment for HIV-infected children

All children with confirmed HIV infection should be referred to the CTC for HIV care. HCWs must monitor infants and children for symptoms of HIV infection that would make them candidates for ARV therapy.

HCWs should plan for appropriate care and treatment of children, initiating referrals with partnering agencies or clinics in the community. The *National Guidelines for the Clinical Management of HIV and AIDS* contain clinical and social criteria for commencing ARV therapy in children.

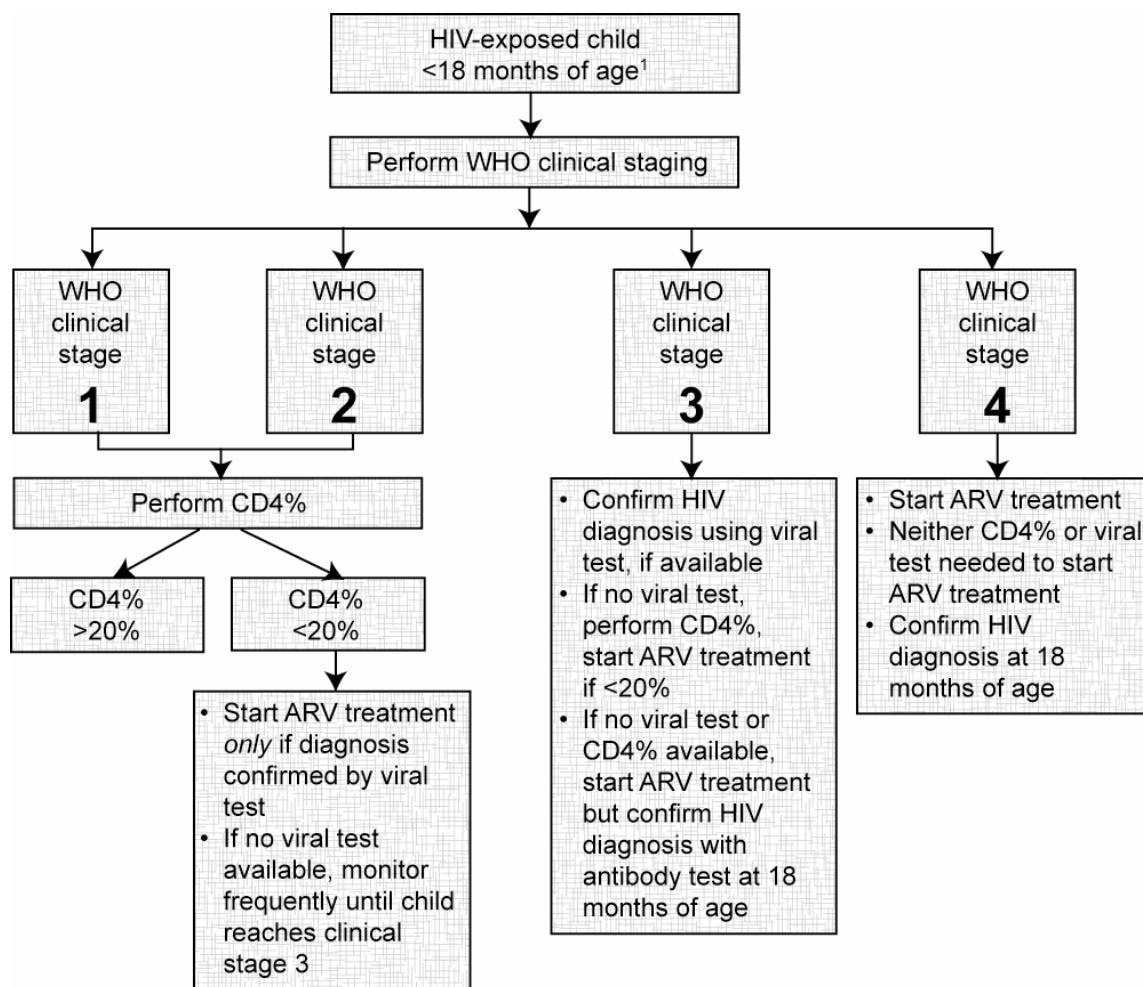
Clinical criteria for commencing ARVs in infants and children

In HIV-exposed children under 18 months start ARV therapy according to the following criteria:

- WHO Paediatric Clinical Stage 4*
- WHO Paediatric Clinical Stage 3 **and** CD4% <20 **or** if Clinical Stage 3 and there is no CD4 testing, start ARV therapy
- If CD4% is available:
 - WHO Paediatric Clinical Stage 1 or 2 **and** CD4<20% **only** with viral confirmation of HIV infection, otherwise monitor until they reach WHO Clinical Stage 3

*Includes presumptive diagnosis. Confirm HIV diagnosis with antibody tests at 18 months of age. Only children with confirmed infection continue ARV therapy.

Figure 7.4 Clinical Criteria for Starting ARV therapy in Infants and children less than 18 months of age



¹ An HIV exposed child is one who is antibody positive according to national protocol

For children **over the age of 18 months**, a positive HIV antibody test indicates HIV infection. Starting ARV therapy for children in this age group is therefore recommended in:

- WHO Paediatric Clinical Stage 3 or 4 regardless of CD4%
- WHO Paediatric Clinical Stage 1 or 2 if CD4 <15%

Immunologic tests for determining eligibility for ARV therapy

It is possible to use immunological tests to assess the severity of HIV infection in children and to guide decision making about ARV therapy. Where CD4 percentage is not available, it is possible to use absolute CD4 threshold values. In addition, total lymphocyte counts (TLC) can be used as an indication of the need to start ARV therapy; however, their predictive value in children younger than 6 months is poor.

Immunological marker ^a	Age-specific recommendation to initiate ARV therapy ^b			
	≤ 11 months	12–35 months	36–59 months	≥ 5 years
CD4 % ^c	< 25%	< 20%	< 15%	< 15%
CD4 count ^c	< 1500 cells/mm ³	< 750 cells/mm ³	< 350 cells/mm ³	< 200 cells/mm ³
To be used only in absence of CD4 assays:				
TLC	< 4000 cells/mm ³	< 3000 cells/mm ³	< 2500 cells/mm ³	< 2000 cells/mm ³
Notes:				
a. Immunological markers supplement clinical staging				
b. ARV therapy should be initiated by these cut-off levels, regardless of clinical stage; a drop of CD4 or TLC below these levels significantly increases the risk of mortality.				
c. CD4% is suggested for children less than 5 yrs.				

Source: WHO. Antiretroviral treatment of HIV infection in infants and children in resource-limited settings, toward universal access: Recommendations for a public health approach 2006 version, Available at: <http://www.who.int/hiv/pub/guidelines/en/>

Follow-up of HIV-infected infants and children

Children with HIV should receive routine paediatric care and should be monitored for HIV disease progression. Children with HIV infection under the age of 1 year should be seen monthly; thereafter, they should be seen every three months. At each visit, a complete physical examination should be done 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.

The need for medication should be reviewed based on history, physical exam and laboratory findings. Paediatric doses have to be adjusted frequently for growth. HCWs should assess the child's growth as well as adherence to and ability to tolerate his or her ARV regimen at every visit and adjust the doses of CPT and ARV medications appropriately.

Medication plans for OI prophylaxis and ARV therapy need to be discussed thoroughly with parents or guardians. It is advisable that one single person in the household is identified as the consistent care provider responsible for dispensing medication to the child. Before ARV therapy for the child begins, HCWs need to assess a family's beliefs about drugs and treatment, the family's readiness to begin treatment and their ability to follow a dosing schedule. The parent or guardian should also demonstrate an understanding of the importance of strict, long-term adherence to treatment and regularly attending the CTC. If possible the family member should also identify a family member or friend to support them with providing medication to the child.

Palliative care

Palliative care is care given to a patient with life-threatening, end-stage disease. Palliative care focuses on keeping patients comfortable and relieving suffering through pain control and addressing their individual psychological, social and spiritual concerns. The goals of palliative care are to maintain quality of life by treating symptoms of the disease, managing side effects caused by medications as well as helping the patient deal with the psychological, social and spiritual problems related to the disease and dying. Palliative care is also called end-of-life care or supportive care.

Palliative care:

- Provides relief from pain and other distressing symptoms.
- Integrates psychological and spiritual aspects of patient care.

- Improves quality of life and may also positively influence the course of the illness.
- Offers support to help patients live as actively as possible.
- Offers support to help the family cope during the patient's illness.
- Affirms life and regards dying as a normal process.
- Neither accelerates nor postpones death.

Simple management of common HIV symptoms, such as nausea, vomiting, fatigue and skin problems can greatly ease discomfort and improve quality of life. Assessment and management of more complex issues such as pain, weight and muscle loss resulting from disease progression can improve comfort, function and emotional well-being.

Palliative care can be provided as inpatient care in a hospital, at clinics or health centres or within a home-based care program. Many aspects of palliative care, such as pain management, symptom control and psychological support, should be used early in the course of HIV disease.

Home-based care

Home-based care provides basic care to PLWHA when hospital and outpatient services are expensive or not accessible.

The advantages of home-based care for patients and families and for communities and the healthcare system, include the following:

- Care is provided in a familiar, supportive environment that allows for continued participation in family matters.
- Medical expenses are reduced.
- The local community is involved in caring for PLWHA, which may help decrease stigma and discrimination.
- The burden on the healthcare system is relieved.

The disadvantages of home-based care include the following:

- Shifts the cost of providing healthcare from the government and other shared resources to individual family members.
- Adds an extra burden on women who are already overworked at home.
- Takes away time from child care and other economic activities.

Home-based care is currently offered by more than 70 national health facilities through a National AIDS Control Programme (NACP) project. HCWs should refer patients in need of follow-up home-based care or palliative care to these programmes. For additional information on the national home-based care programme, please see *Guidelines for Home-based Care Services* NACP 2005.

Referrals and linkages to community-based organisations are discussed further in Unit 4.

Exercise 7.6 Adherence counselling and support: Role-play	
Purpose	To provide an opportunity for participants to explore issues that may arise when counselling patients and their families who are receiving ARV treatment.
Duration	35 minutes
Instructions	1. After trainer introduction, participants will pair up and play the roles of HCW and mother (and observer as necessary). Refer to the "Measures to Increase ARV Treatment Adherence" section of the Participant

Exercise 7.6 Adherence counselling and support: Role-play	
	<p>Manual and Appendix 7-E: <i>Information about Antiretroviral Medicines</i>.</p> <ol style="list-style-type: none"> 2. Role-play pairs will read the case study out loud and introduce themselves in their roles. 3. In the large group discussion following the role-plays, the trainer will ask the mothers and the HCWs roles the following questions: <ol style="list-style-type: none"> 1. What were the main points learned in the session? 2. What were the major problems that could be contributing to poor patient adherence to an ARV regimen? 3. What strategies did you develop to address your client's problems? Encourage participants to draw on their own experiences with patients. 4. What strategies could you use to try and get care and treatment for this mother and her infant at the same time? 5. Did you suggest a referral to the CTC for the mother and/or infant? Why or why not?

Exercise 7.6: Role-play scenario

You are seeing a 20-year-old woman at your clinic who was diagnosed with HIV during pregnancy last year. She started ARV therapy during pregnancy using the first-line regimen (AZT/3TC/ NVP) and delivered a baby girl without complications. She has come to the clinic complaining of severe fatigue. Today she appears tired and very pale.

She lives with her husband who does not know her HIV status although she has disclosed her status to her sister. She has recently started working again and complains that it is difficult to remember to take her medications now that she is so busy and so tired. She is worried about how she will continue taking the medication without her husband finding out that she is infected. Also, she just got a new job and her mother-in-law, who also does not know her HIV-status, has been taking care of the 5 month old infant. She has been trying to breastfeed her infant exclusively but knows that her mother-in-law has been feeding the infant other foods. The infant has also missed some of his cotrimoxazole doses because the mother-in-law does not know that she is taking medication.

UNIT 4 Community Linkages for Treatment, Care and Support Services for Mothers and Families

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Identify community resources for ongoing family support.
- Identify techniques for ensuring effective community participation in PMTCT activities.

Linkages for Comprehensive Care

HCWs can strengthen the follow-up care that HIV-infected women and their families receive by making linkages to other HIV care, treatment and social support organizations.

Linkages can be fostered in many ways:

- HCWs can expand their practices to include follow-up of mothers and their families for comprehensive care services and, where necessary, establish referral systems to other care programmes.

Linkages between RCH and HIV services

- PMTCT services integrated into RCH are entry points for the treatment, care and support of women who are HIV-infected, their infants and family members.
- Patient confidentiality must be preserved as healthcare facilities co-manage patients.
- Care and treatment for families dealing with HIV is a shared responsibility.
 - Community health workers may be encouraged to provide health information, as well as care and support services, to HIV-affected families.
 - Specialists in HIV treatment at CTCs who care for women and children can provide consultation, ARV therapy and help with the ongoing management of HIV infection.

The National Health and Education Unit can assist with outreach by organising special mass media education programmes to support HIV care and treatment services.

Linkages with other health programmes for special needs

- Some programmes target specific health needs of HIV-infected women, such as family planning, treatment of sexually transmitted infections (STIs), or assistance with substance abuse.
- Disease-specific programmes, such as TB programmes, may benefit women who are HIV-infected. TB is a leading cause of mortality in persons infected with HIV.
- Nutritional support programmes for mothers and children are especially important for people living with HIV (PLWHA).
- Home-based care programmes may be an important resource for women and families in rural areas. HCWs should attempt to link women who need home care or close follow-up to the National AIDS Control Programme's home-based care project.
- Community-based service organisations, including NGOs and faith-based organisations, can address psychosocial as well as medical needs.

Community Linkages

Government health facilities cannot meet all of the complex, psychosocial needs of families living with HIV. In order to offer truly comprehensive care, health facilities must often partner with non-governmental organisations (NGOs), faith-based organisations (FBOs) and similar agencies that provide treatment, care and support services for mothers who are HIV-infected and their family members.

Linkages to community-based organisations can provide the resources, such as support groups and social activities, to help women who are HIV-infected and their families cope with the isolation, social stigma and emotional pressures that often accompany a diagnosis of HIV. Community-based organisations such as women's groups also may provide women infected with HIV a way to become involved in voluntary or paid HIV-related work in community development projects that might help their families and may help meet specific needs such as housing, transportation, food assistance and legal assistance and advice.

Some religious leaders have received training about HIV-related stigma and have the potential to be powerful allies for counselling and supporting HIV-affected families.

HCWs can facilitate a connection with community-based initiatives by building a relationship with supportive community agencies, identifying key partners and working together to establish the good communication. Where no such organisations exist, HCWs can foster their development through community mobilisation.

Building community teams for shared responsibility

- Formalise connections among RCH programmes, health systems and community programmes, whenever possible.
- As people who work in community agencies and healthcare settings learn more about services available outside of their own setting, people living with HIV can gain access to a wider range of services.

Community Education, Outreach and Mobilisation

Lack of communication with communities has limited the number women who use PMTCT services in many countries. One of the roles of HCWs is to inform communities of new health problems such as MTCT of HIV, to share information on the practices that can address these problems and to help the community adopt new practices and behaviours. Health communication can greatly strengthen PMTCT programmes.

PMTCT services should be developed at the same time as PMTCT communication initiatives. These communication initiatives should not be one-time occurrences, but rather a series of regularly scheduled ongoing events to support the PMTCT programme. The goal is to increase community awareness about the PMTCT programme and to prepare the community to accept and utilize PMTCT services.

Community education and outreach

Definition: Community Outreach is a formal attempt to increase public awareness and support for a healthcare program. Community outreach aims to bring tailored health education to specific populations with the aim of changing knowledge and behaviours.

The goals of PMTCT community outreach nationally include:

- Creating awareness and increasing knowledge about PMTCT and HIV, including understanding the benefits of knowing one's HIV status and importance of postpartum care and follow-up.
- Creating demand for PMTCT services.
- Influencing attitudes, norms, values and behaviour change regarding PMTCT issues, including infant feeding and community care and support of HIV-affected families.
- Creating a supportive environment for PMTCT patients and their families.
- Providing services and education to remote areas with poor access to health care.

Nationally, community outreach is usually done through health education talks in communities, musical performances with PMTCT messages, theatre skits and role-plays, brochures and pamphlets, posters, pre-counselling informational videos and radio and television messages.

Messages

The national central communication message is that mothers and fathers should use PMTCT services to:

- Give their babies the chance to be healthy and HIV-free.
- Receive HIV care and treatment for themselves and their families if needed.

Communication initiatives must clearly convey that PMTCT interventions are not 100% effective so that women do not feel that they were misinformed if their children are infected despite receiving PMTCT interventions.

All four elements of the comprehensive PMTCT approach should be addressed in the messages. HCWs should ensure that the messages they use in their communication with the community are consistent with those in the national PMTCT guidelines and those used in other health sectors. The messages communicated by agencies and HCWs should be developed with input from communities.

Audience

Communication messages should target many different audiences. While women of reproductive age may be the primary audience for communication messages, messages should also be created for members of the wider community (e.g., other HCWs outside of the RCH and ANC setting, members of civil society groups and community leaders). Importantly, specific communication messages should be created for men and they should be delivered in venues that men will attend such as sports stadiums, markets, places of worship, taxi stands and places where men congregate. If possible, influential leaders for men such as religious leaders, businessmen and leaders of social groups should be brought into the community mobilisation process.

Community mobilisation

The goal of community mobilisation is to ensure that the community participates in identifying its health problems, the cause of these problems, possible solutions to these problems and the resources necessary to carry out these solutions.

Community mobilisation is different from health education and outreach. While education aims to inform communities in order to get them to pursue a course of action to address a question, mobilisation aims to empower communities to name their *own* problems and to find their own solutions to these problems using their own resources. Community mobilisation is usually a long-term process involving intensive, participatory work with community members. While health education and outreach is used to get people to support and participate in existing HIV initiatives, community mobilisation is often used as a tool for getting communities to explore the values and norms that may stigmatise PLWHA and to get them to initiate new projects and activities that help PLWHA.

Implementing community outreach and mobilisation

Health education activities are a normal part of the duties of many HCWs. Several health facilities have interdisciplinary teams of nurses and public health workers who are responsible for health education in the general community. Busy HCWs may not have the skills and or time to conduct these activities. For this reason, HCWs may want to consider partnering with governmental and non-governmental organisations that specialise in

community mobilisation and health communication to work with them on the larger, more complex communication initiatives.

HCWs who wish to conduct community mobilisation activities should receive detailed training in participatory development communication. For conducting more basic outreach activities, detailed guidelines on providing health education talks are provided in Appendix 7-G: *Conducting a PMTCT Health Education Session*.

Male partner involvement in PMTCT programmes.

Male involvement in PMTCT programmes has often been difficult and challenging. However, their participation in a PMTCT programme 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. Various strategies can be used to help involve men. Some examples include:

- Using male role models to deliver PMTCT messages about safer sex and taking responsibility for families.
- Creating positive messages through awareness and education campaigns that promote the role of “good husbands and fathers” who know how to protect themselves, their partners and their families from HIV.
- Encouraging men and their partners to attend RCH appointments together. Providing women with cards to take home, inviting their partners to attend appointments, has been shown to work in some areas.
- Creating a clinic environment that is welcoming to men attending HIV counselling and testing information sessions, including flexible hours to accommodate work schedules.

Exercise 7.7 Community linkages: Small group discussion	
Purpose	To identify the range of services locally available to PLWHA, encourage interagency networking and linkages, and facilitate patient referral to community services.
Duration	25 minutes
Instructions	<ul style="list-style-type: none"> ▪ You will be assigned to groups based on a sign-up sheet that the trainer puts up. ▪ Choose a spokesperson for the group. ▪ Refer to the Community Resource Information worksheet in your manual ▪ Using your notes from last night, look at the worksheet and for each category answer the following questions: <ul style="list-style-type: none"> ▪ Do you know of a local resource for each listing? For example, do they know of a local support group or club for PLWHA? ▪ If so, are you aware of the address, location, and hours of operation? ▪ Do you know of a contact person for networking and referral? ▪ Are there other resources available in your area that are not included in the worksheet categories? ▪ Are there community members who can help you expand the resource list? ▪ Report back on the services available at your facility and community

Community resource information worksheet

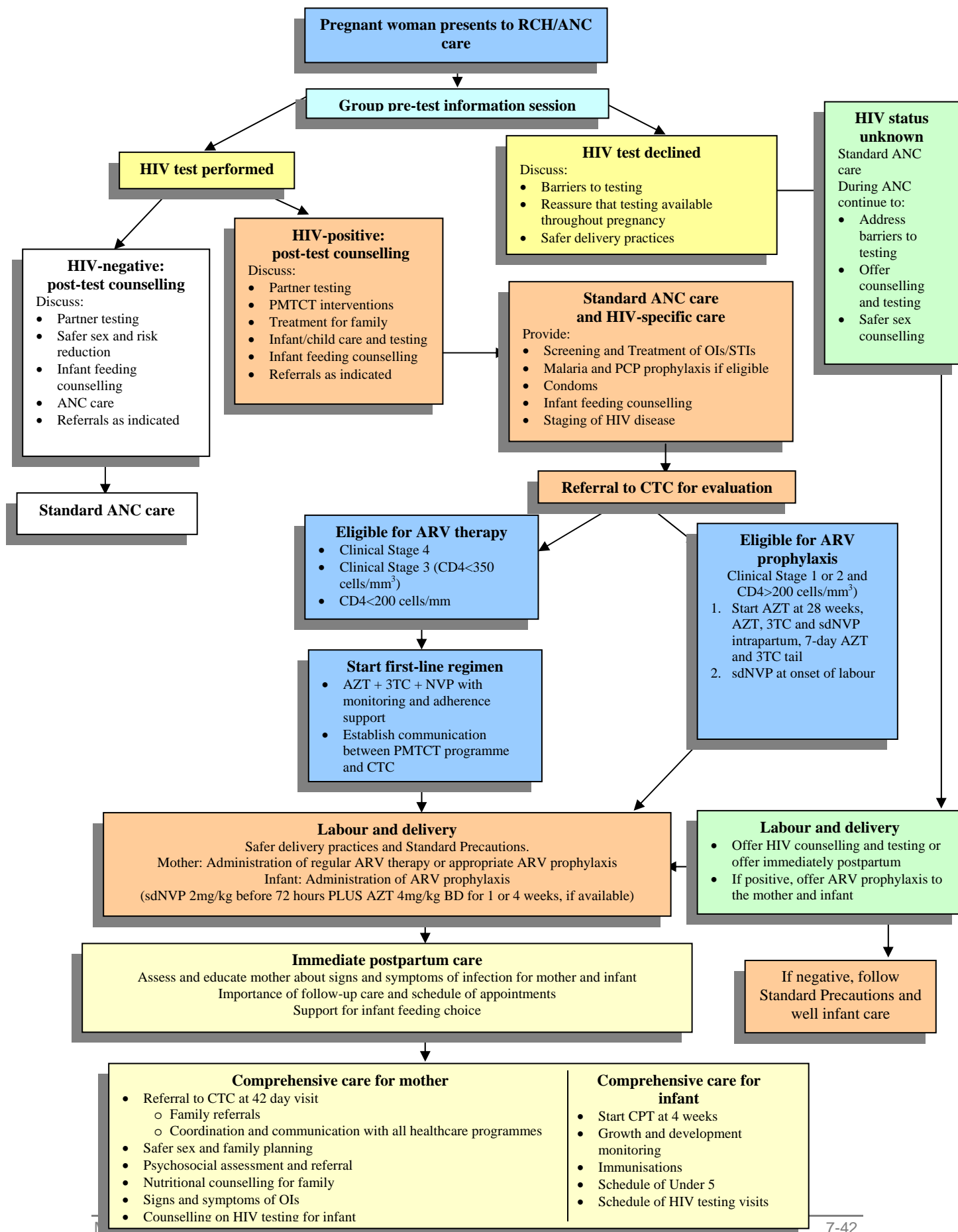
Use this form to list the contact information for agencies that provide services to families living with HIV.

COMMUNITY RESOURCES THAT SUPPORT THE PMTCT PROGRAMME		
Resource Category	We Have	We Need
Counselling and testing for partners		
Healthcare (STIs, reproductive health, TB treatment, etc.)		
Care and treatment centres (CTCs) for ARVs and HIV care		
Nutritional support and/or infant feeding programmes		
Support group or club for PLWHA		
Community-based AIDS service and faith-based organisations		

Module 7: Key Points

- Comprehensive PMTCT programmes involve strategies to provide treatment, care and support of women infected with HIV, their infants and their families.
- As immune function weakens, opportunistic infections may develop.
- Co-infection with TB or malaria may increase HIV-related morbidity and mortality.
- CPT should be provided for symptomatic HIV-infected adults and for HIV-exposed infants until the infants are no longer breastfeeding and are proven to be HIV-negative
- For children less than 18 months of age, symptoms can be used to guide a diagnosis of HIV infection.
- Follow-up care visits for HIV-exposed infants should coincide with the immunisation schedule on the Child Health Card and should focus on early identification and treatment of health problems.
- HIV-testing and monitoring growth and development are an integral part of follow-up care of HIV-exposed and infected children.
- ARV drugs do not cure HIV. ARVs decrease the reproduction of HIV (reducing viral load) and slow the destruction of the immune system or help the immune system to recover.
- ARV drugs must be taken every day at the same time; near perfect adherence is necessary in order for the drugs to work effectively.
- The *National Guidelines for the Clinical Management of HIV and AIDS* contains guidelines for commencing ARV therapy and ARV regimens for adults and children.
- In addition to meeting clinical criteria for ARV therapy, patient readiness for treatment and adherence issues must be addressed.
- Pregnant women who are eligible for ARV therapy require specific management and monitoring provided through CTCs.
- Improving access to comprehensive care and treatment for women and their families requires the establishment of strong referral and linkage systems.
- Linkages for postpartum follow-up of home deliveries require creative strategies.
- Community mobilisation supports linkages between RCH and community services and ensures continuity of care.
- Developing unique ways to increase male involvement in PMTCT programmes is an effective strategy to prevent MTCT.

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



APPENDIX 7-B Suggestions to Maximise Food Intake for People Living With HIV (PLWHA)

Symptom	Suggested Strategy
Fever and loss of appetite	<ul style="list-style-type: none"> ▪ Choose locally available high-protein foods such as beans, fish, chicken or beef. ▪ Throughout the day, eat small portions of soft foods (from the list above) with a pleasant aroma and texture. ▪ Eat nutritious snacks whenever possible. ▪ Drink liquids often.
Sore mouth and throat	<ul style="list-style-type: none"> ▪ Avoid citrus fruits, tomatoes, spicy foods. ▪ Avoid very sweet foods. ▪ Eat foods at room temperature or cooler. ▪ Eat thick, smooth foods such as pudding, porridge, mashed potato, mashed carrot or other non-acidic vegetables and fruits.
Nausea and vomiting	<ul style="list-style-type: none"> ▪ Avoid large meals and eat small nutritious snacks during the day. ▪ Eat toast and other plain, dry foods. ▪ Avoid foods that have a strong aroma. ▪ Drink diluted fruit juices, other liquids, soup. ▪ Eat simple boiled foods, such as porridge, potato, beans.
Loose bowels	<ul style="list-style-type: none"> ▪ Eat bananas, mashed fruits such as paw paws and bananas, soft rice, porridge. ▪ Eat smaller meals, more often. ▪ Eliminate dairy products to see if they are the cause. ▪ Decrease high-fat foods. ▪ Avoid foods that are high in fibre. ▪ Drink liquids often.
Fat malabsorption	<ul style="list-style-type: none"> ▪ Eliminate oils, butter, margarine and foods that contain or are prepared with them ▪ Eat only the leanest available meats such as fish and chicken. ▪ Eat fruit, vegetables and other low-fat foods.
Severe diarrhoea	<ul style="list-style-type: none"> ▪ Drink liquids frequently. ▪ Dilute fruit juices. ▪ Eat bananas and soft rice.
Fatigue and lethargy	<ul style="list-style-type: none"> ▪ Ask a family member or neighbour to help with food preparation. ▪ Be sure to set aside time each day for eating. ▪ Eat slowly, a little at a time. ▪ Eat fresh fruits that don't require preparation.

Adapted from Woods, MN: 1999. Dietary recommendations for the HIV/AIDS client. In: *Nutritional Aspects of HIV Infection*, ed. T. Miller and SL. Gorbach, Arnold Press.

APPENDIX 7-C Additional Information on National Immunisation Guidelines According to the EPI Programme

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 the immune response.

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 immunisation 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. 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. 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. WHO recommends that the hepatitis B vaccine be included in routine childhood immunisation schedules for all children. Given in Tanzania as the combined DPT-HB vaccine.

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.

Sources: Adapted from WHO, Department of Vaccines and Biologicals. 2001. Introduction of hepatitis B vaccine into childhood immunization services. Management guidelines, including information for health workers and parents. Retrieved 30 July 2004, from www.who.int/vaccines-documents/DocsPDF01/www613.pdf

APPENDIX 7-D Talking With Parents About Their Child's HIV-Positive Test Results

Prepare for the talk with parent or guardian.

- Make sure you have the child's test result and inform the parent that you have the result.
- Schedule an appointment.

Greet the parent and establish rapport.

- Ask if the parent or guardian has had any questions since the child's blood test.
- Answer the questions and let the parent know that counselling will continue to be available to help with important decisions.

Inform the parent of the test result.

- Ask, "Are you ready to receive your child's HIV test result?"
- State, in a neutral tone, "The infant's test result is positive. This means that the infant has HIV infection."
- Wait for the parent to respond before continuing. Give the parent time to express any emotions.
- If the parent would like to see proof of the result, provide it.
- Explain that the blood test revealed evidence of HIV, the virus that causes AIDS, in the infant's body. Review the testing procedure with the parent and check to be sure he or she understands the test results. Explain the accuracy of the test. Allow time for silence.
- Reassure the parent that, although there is no cure for HIV, there are medicines for infections that the child can receive. Emphasize that with good care and medicines children can live many years before. Talk about available ARV therapy for HIV.
- Recognise that many people may interpret this diagnosis as a death sentence. Anticipate reactions of grief, shock, disbelief, denial and anger. Offer appropriate support.

Discuss ways to keep the child healthy.

- Emphasize the need for immunisations and regular follow-up visits.
- Discuss the importance of good nutrition and the importance of preparing and storing food in a clean, safe manner.
- Stress that the child should be allowed to live an active life and play like other children whenever possible.
- Refer parent and child to CTC for ARV therapy assessment.
- Discuss the importance of going to the CTC immediately if there are signs that the child's disease is progressing.
- Stress the importance of CPT; ensure that the parent has access to cotrimoxazole and instruct the parent in how to give the liquid or pill.

APPENDIX 7-D Talking With Parents About Their Child's HIV Test Results *(continued)*

Review Standard Precautions.

- Reassure the family that close contact with family members and normal infant care do not transmit HIV.
- Review measures for diaper/nappy changing (no gloves are necessary), blood spills (wear gloves) and open sores (sores should be covered).

Identify other family members who may be at risk of HIV infection.

- Identify siblings who may also be at risk of HIV infection. Arrange for these siblings to come to the facility for testing.

Identify a support system.

- Help the parent to identify people or organizations in the community who can help or support the family.
- Assess the psychological status of mother and other family members.
- Refer family to a PLWHA support group, if one exists.

Review issues of confidentiality.

- Explain how confidentiality is handled in the clinical setting.
- Discuss the feasibility of the parent sharing the child's HIV status with others.

Assess the family's understanding of the diagnosis, treatment and care at each visit.

- Review and offer additional information as appropriate.

APPENDIX 7-E 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) Lamivudine (3TC) Stavudine (d4T) Zidovudine (AZT)	<ul style="list-style-type: none"> ▪ These drugs 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 drugs 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)	<ul style="list-style-type: none"> ▪ These drugs 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)	<ul style="list-style-type: none"> ▪ These drugs block the protease enzyme. ▪ When protease is blocked, the new viral particles can not be made properly.

Adapted from: New Mexico AIDS Education and Training Center. Fact sheet #430,410,440 and 460 downloaded July 25, 2006 from <http://aidsinonet.org/factsheets.php>

APPENDIX 7-E Information about Antiretroviral Medicines *(continued)***Side Effects**

Drug	Very common side effects	Potentially serious side effects and adverse events	Long-term side effects
	Warn patients about side effects before they occur and suggest ways they can manage the side effects	Educate patients how to recognize side effect and what to do	Refer patients to CTC
d4T stavudine	Nausea Diarrhoea	Seek care urgently at CTC: <ul style="list-style-type: none"> ▪ Severe abdominal pain ▪ Fatigue ▪ Shortness of breath Seek advice soon if: <ul style="list-style-type: none"> ▪ Tingling, numb or painful extremities 	Changes in fat distribution: <ul style="list-style-type: none"> ▪ Arms, legs, buttocks and cheeks become thin ▪ Breasts, belly and back of neck become fat
3TC lamivudine	Headache Nausea Diarrhoea		
NVP nevirapine	Nausea Diarrhoea	Seek care urgently at CTC: <ul style="list-style-type: none"> ▪ Severe rash with peeling ▪ Signs of Liver toxicity: <ul style="list-style-type: none"> ▪ Jaundice/yellow eyes ▪ Severe nausea and fatigue 	
AZT zidovudine	Nausea Diarrhoea Headache Fatigue, muscle pain	Seek care urgently at CTC: <ul style="list-style-type: none"> ▪ Pallor (anaemia) ▪ Severe fatigue 	
EFV efavirenz	Nausea Diarrhoea Headache Vivid dreams Difficulty sleeping Memory problems Dizziness	Seek care at the CTC if you are on EFV and you become pregnant.	

Adapted from: World Health Organization. *Chronic HIV Care with ARV Therapy and Prevention*. Integrated Management of Adolescent and Adult Illness (IMAI) DRAFT February 2006.

APPENDIX 7-E Information about Antiretroviral Medicines *(continued)*

Common side effects	Basic symptom management
Nausea	Take medication with food. If on AZT, reassure that this is common, usually self-limited. Treat symptomatically. If 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 that this is common and usually self-limited. If persists more than 2 weeks (14 days) or worsens, call for advice or refer to CTC.
Diarrhoea	Hydrate. Follow clinic protocol for managing diarrhea. Reassure patient that if diarrhea 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 (usually lasts < 3 weeks). Call for advice or refer if severe depression or suicidal or psychosis. Initial difficult time can be managed with locally available antidepressants or sleep medications.
Blue/black nails	Reassure. 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 generalized rash after starting ABC, stop the medication immediately 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 therapy. Nevirapine is most common cause. Call for advice or refer to CTC.
Pallor: anaemia	If possible, measure hemoglobin and compare with baseline value. If severe pallor or symptoms of anaemia or very low haemoglobin (<7.5), stop AZT, refer, and consult.
Tingling, numb 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 Organization. *Chronic HIV Care with ARV Therapy and Prevention*. Integrated Management of Adolescent and Adult Illness (IMAI) DRAFT February 2006.

APPENDIX 7-E Information about Antiretroviral Medicines

(continued)

Principles of drug-drug interactions with antiretrovirals

In general, the most clinically significant drug interactions take place with the protease inhibitor class and to a lesser degree the NNRTI class. In Tanzania, lopinavir/ritonavir (LPV/r) is used only in second line treatment regimens. However, nevirapine (NVP) and efavirenz (EFV) are medications used much more frequently as a part of the recommended first line regimen. When either of these NNRTIs is used with other medications, close clinical monitoring is necessary to identify potential interactions, specifically HCWs need to assess for and identify possible liver toxicity. The NNRTI class is likely to interact with the following classes of medications because of an overlap in enzyme pathways:

- Antituberculosis medications
- Anticonvulsants
- Antihistamines
- Macrolide antibiotics
- “-azole” antifungals
- Antiarrhythmic drugs
- Opiates

The NRTI class, e.g., AZT, has few if any interactions with other drugs.

Antimalarials and antiretrovirals

The clinical significance of interactions between antiretrovirals and antimalarials is under study. Interactions between medications to treat these two common diseases may occur. The most significant interactions take place between lumefantrine and halofantrine with a PI or an NNRTI. The interaction between quinine and a PI/NNRTI needs further evaluation. Antimalarials using artemether may also be affected by PIs or NNRTIs, but the data is limited and the clinical implications are unclear. For more information see Khoo S., Back D., Winstanley P. (2005). The potential for interactions between antimalarials and antiretroviral drugs AIDS (10)995-1005.

Hormonal contraceptives and antiretrovirals

Information about interactions between hormonal contraceptives and ARVs is limited. No clinical outcome studies have been conducted and the clinical significance of potential interactions is unknown. Using an additional barrier method is one strategy when a woman is on a NNRTI and an hormonal contraceptive like an oral contraceptive pill or an injectable method.

APPENDIX 7-E Information about Antiretroviral Medicines *(continued)*

Antiretroviral (ARV)	Interacting Drug	Effect on ARV Levels	Effect on Drug Level	Potential Clinical Efforts	Management	Suggested Alternative Agent(s)
Selected hormonal contraceptives						
Lopinavir/ritonavir (LPV/r)	Ethinyl estradiol/norethindrone acetate	-	Ethinyl estradiol decreased Norethindrone decreased	Possible contraceptive failure	Use alternative contraceptive method	Barrier devices Condoms
Nevirapine (NVP)	Ethinyl estradiol/norethindrone acetate	No significant change	Ethinyl estradiol decreased Norethindrone decreased	Possible contraceptive failure	Use alternative contraceptive method	Barrier devices Condoms
Selected anti-tuberculosis drugs						
Efavirenz (EFV)	Rifabutin	No significant change	Rifabutin decreased	Decreased rifabutin effects	Increase rifabutin to 450-600 mg QD	-
Nevirapine (NVP)	Rifampin	Decreases	Nevirapine decreased	Decreased nevirapine effects	Avoid if possible, if used conduct close clinical and laboratory monitoring	Rifabutin Or use EFV in place of NVP
Selected antifungals						
Efavirenz (EFV)	Intraconazole	-	Itraconazole decreased	Decreased Intraconazole effects	Do not coadminister	-
Nevirapine (NVP)	Ketoconazole	Increases	Ketoconazole decreased	Decreased	Do not coadminister	-
Lopinavir/ritonavir (LPV/r)	Intraconazole and Ketoconazole	May increase LPV/r levels	Increased Lopinavir/ritonavir effects; increased Itraconazole and Ketoconazole effects	Increased effect and side effects of both drugs	Do not use more than 200mg of either anti-fungal daily	Fluconazole

"-" means there is no information available

For more information on drug-drug interactions and source for the table above see, HIV InSite, *Database of Antiretroviral Drug Interactions*, available at: <http://hivinsite.ucsf.edu/InSite?page=ar-00-02> and <http://www.hiv-druginteractions.org/>.

APPENDIX 7-F National ARV Regimens for Adults and Children

First Line ARV Regimens for Adults	
Stavudine (d4T) + Lamivudine (3TC) + Nevirapine (NVP)*	
Dosing instructions for first line regimen	
<p>There are several fixed dose combinations (FDC) of d4T-3TC-NVP available nationally. One of them is called "Triomune."</p> <p>Triomune 30 or 40 contains d4T 30 or 40 mg, 3TC 150 mg and NVP 200mg. If patient's body weight is < 60 kg use Triomune 30; if body weight is > 60 kg use Triomune 40</p> <p>Stavudine (d4T)</p> <ul style="list-style-type: none"> ▪ For patients <60 kg, d4T 30 mg twice a day ▪ For patients >60 kg, d4T 40 mg twice a day <p>Lamivudine (3TC)</p> <ul style="list-style-type: none"> ▪ 150 mg twice a day <p>Nevirapine (NVP)</p> <ul style="list-style-type: none"> ▪ Induction dosing for the first 2 weeks decreases the risk of hepatotoxicity and severe rash. Give NVP 200 mg once every day for two weeks and then increase to twice a day. ▪ If using FDCs, take Triomune once in the morning and then only d4T 30/40 mg and 3TC 150 mg in the evening for the first two weeks of treatment. If tolerated, continue at full dose of Triomune 30 or 40 twice daily. <p>Zidovudine (AZT)</p> <ul style="list-style-type: none"> ▪ 300 mg twice a day <p>Efavirenz (EFV)</p> <ul style="list-style-type: none"> ▪ 600 mg at night on an empty stomach ▪ Should be avoided during the first trimester of pregnancy and in women of childbearing age when pregnancy cannot be excluded. 	
First line substitutions	
<p>If patient has peripherhal neuropathy but no anaemia, replace d4T with Zidovudine (AZT).</p>	<p>If patient experiences hepatotoxicity, an intolerance to NVP, or has TB and is taking rifampicin, replace NVP with Efavirenz (EFV).</p>
<p>Unless contraindicated, all patients will commence therapy on: d4T+3TC+NVP <i>with dose adjustment of the NVP portion for the first two weeks.</i></p> <p>However patients can be started on or switched to alternative first line regimens under the following circumstances:</p> <ul style="list-style-type: none"> ▪ AZT+3TC+NVP if there is peripheral neuropathy ▪ d4T+3TC+EFV if there is TB and anaemia (Hgb <7.5gm/dl) ▪ AZT+3TC+EFV if there is TB and no anaemia 	

APPENDIX 7-F National ARV Regimens for Adults and Children (continued)

Second Line Regimen for Adults
Abacavir (ABC) + didanosine (ddI) + lopinavir/ritonavir (LPV/r)
<p>Dosing instructions for second line regimen</p> <p>Abacavir (ABC)</p> <ul style="list-style-type: none"> ▪ 300 mg twice a day <p>Didanosine (ddI)</p> <ul style="list-style-type: none"> ▪ For patients <60kg, 250-300 mg every day ▪ For patients >60kg, 400 mg every day (or 200 mg twice a day) <p>Lopinavir boosted with ritonavir (LPV/r)</p> <ul style="list-style-type: none"> ▪ 400/100 mg twice a day (each tablet contains 133.3/33.3 mg) take 3 tablets twice a day to get recommended dose ▪ LPV/r may be substituted with boosted saquinavir (SQV/r) - SQV 1000 mg plus ritonavir 100mg twice a day (each tablet of saquinavir contains 200 mg) take 5 tablets of SQV twice a day to get recommended dose

First Line ARV Regimens for Children
<p>For children <3 years old use AZT + 3TC + NVP</p> <p>For children >3 years old use AZT + 3TC + (EFV or NVP)</p>
<p>d4T is an alternate for AZT in cases of anaemia (Hgb<7.5g/dl). It should be noted that d4T in liquid formulation needs refrigeration. Also, potential side effects, such as peripheral neuropathy, are difficult to recognise in children.</p>
<p>Dosages for second line regimens for children are available in the <i>National Guidelines for the Clinical Management of HIV and AIDS</i>.</p>

d4T	- stavudine	AZT	- zidovudine
3TC	- lamivudine	ddI	- didanosine
NVP	- nevirapine	LPV/r	- lopinavir/ritonavir
EFV	- efavirenz	SQV	- saquinavir
		RTV	- ritonavir
		SQV/r	- boosted saquinavir

Adapted from the following source: The United Republic of Tanzania Ministry of Health, National AIDS Control Programme (NACP) Second edition, April 2005. *National Guidelines for the Clinical Management of HIV and AIDS*.

APPENDIX 7-G Conducting a PMTCT Health Education Session

BASIC STEPS

Prepare the location for the health education session:

- Set up the seating so that everyone in the audience can see.
- Ensure adequate ventilation and light.
- Prepare all visual aids.
- Prepare the lesson plan.

Prepare the audience:

- Greet the audience politely.
- Give the audience an outline of what the session will entail.
- Ask if everybody is present and ready for the session.
- Introduce yourself and others in your team.

Present the session:

- Introduce the topic.
- Address the key messages on PMTCT.
- Elaborate on each key point using visual aids as necessary.
- Allow questions and answer them factually.
- Make the session as participatory as possible: ask for audience opinion and questions, include role-plays, skits or other interactive exercises, and allow audience members to attempt to answer each other's questions.

Close the session:

- Summarise key points.
- Ask questions to evaluate audience understanding.
- Summarise key conversation points and discuss any next steps.
- Distribute any educational material or brochures that you would like the audience to keep.
- Tell the audience that the session is over and thank them for their participation.

APPENDIX 7-G Conducting a PMTCT Health Education Session (continued)

Content

Key content to be included in community education sessions include discussions of the following:

- Basic HIV/AIDS information (e.g., how HIV is spread, difference between HIV and AIDS)
- Impact of HIV/AIDS on communities
- Misconception and myths about HIV/AIDS
- Psychosocial issues related to HIV/AIDS
- Interventions to prevent mother-to-child transmission of HIV
 - Counselling and testing services
 - Improved ANC and modified obstetric care
 - Use of ARVs to prevent MTCT and to treat HIV
 - Modified infant feeding
 - Family planning
 - Importance of male involvement
 - Care and treatment

Basic health education skills

Use adult learning methods.

It is widely acknowledged that adults absorb new information best when they:

- Are actively involved in the process of learning.
- Can share their knowledge and experiences and learn from other participants.
- Can apply the new information to their everyday life.
- Are thought in a safe, respectful and comfortable atmosphere.

Giving effective health education sessions requires many of the facilitation skills needed for individual counselling. Presenters and trainers need to be able to make participants feel comfortable, encourage them to share their thoughts and experiences and clarify their statements in non-judgmental ways.

Preparation

- Leading presentations requires detailed preparation.
- The presenter must know the subject matter well and feel comfortable talking about it in public.
- The presentation should be prepared well in advance and should be reviewed to make sure that it is written at a level that is appropriate for the audience education level, is logical and clearly organised.
- A sufficient number of handouts and brochures should be ready for the audience.
- All presentation tools such as flip charts, posters, videos, visual aids and equipment should be arranged and checked before the session starts.

APPENDIX 7-G Conducting a PMTCT Health Education Session

(continued)

- The presentation room should be arranged so that there is adequate seating and that all participants will be able to see.

When giving a presentation or speaking in front of a group health care workers should keep the following guidelines in mind:

Movement

- Make sure that the audience can see you clearly; do not stay in a corner or behind a desk.
- Move around the room when presenting. Approaching participants will help you get their attention and allow them to respond to your questions easily.
- Face the group when speaking.
- Make appropriate eye contact with people in all sections of the audience.
- Use natural gestures and facial expressions in your presentation. The goal is to appear relaxed and confident.

Speaking

- Speak slowly, clearly and in a voice loud enough for the group to hear. This is particularly important if you are giving your talk in a language many in your audience do not speak as their native language.
- Use simple and appropriate language in your presentation.
- If you must use new or difficult words, pronounce and explain them clearly.
- Try to speak in an enthusiastic manner and use a natural voice. Vary the tone of your voice from time to time—try not to give the entire presentation in the same tone of voice as this will become tiring to the listeners.

Content

- Follow your presentation plan closely, making sure that all important points are covered.
- Use stories and analogies to explain complex concepts.
- Encourage participation by inviting questions and comments.
- Keep to the scheduled time. Try not to rush or spend too much time with an early part of the session.
- Reiterate key “take home” messages at the end of the session.

Facilitation Skills

One of the health care worker’s main responsibilities is to ensure that everyone in the audience has an opportunity to participate in the session. Effective trainers promote discussion among group members and encourage sharing and learning among participants. In particular, good trainers should:

- Use open-ended questions to encourage participants to give detailed answers and interact.
- Pay close attention to what participants say and use questions to demonstrate that their contributions are valued.
- Adopt a non-judgemental attitude toward audience members who have cultural, religious and medical beliefs that may be different from your own. This does not mean that you need to agree with what they say but only that you should moderate your reaction to their statements.

APPENDIX 7-G Conducting a PMTCT Health Education Session

(continued)

- The trainer will have to learn techniques that will increase participation in order to:
 - Manage talkative participants and those who dominate the group.
 - Ensure that all participants, including quiet or shy members, have an opportunity to participate.
 - Make the session interactive and participatory rather than a simple lecture.
- Instead of talking for the entire session, schedule times when participants get to ask questions. Also make sure to ask questions of different participants.
- When asking questions, allow the audience sufficient time to answer. Do not supply the answer too quickly. Do not answer the question yourself every time. If possible have participants answer each other's questions. You can do this by asking: "Does anyone have an answer to that question?"
- Give encouraging responses to all participant answers. Be polite when correcting wrong answers.
- Steer participants' conversations back to the main discussion when they drift off the point.
- Try to involve all participants in discussions. When a few people have been dominating the discussion, ask the group if anyone else has an opinion on the topic or if everyone agrees with the points that participant has just made.
- Use open-ended questions to encourage participants to share their concerns and knowledge. When participants respond with short, "Yes" or "No" answers, ask them to explain their answers more fully. For example, ask "Why do you say that?"
- Maintain open body language that encourages audience members to participate. Don't cross your arms, frown, or shake your head when participants are speaking.
- If you do not know the answer to a question, be honest and say so.

Module 8 Safe and Supportive Care in the Work Setting



Total Module Time: 230 minutes (3 hours, 50 minutes)

MODULE OBJECTIVES

After completing the module, the participant will be able to:

- Describe strategies for preventing HIV transmission in the healthcare setting.
- Identify key steps and principles involved in the handling of sharps, contaminated equipment and other materials.
- Assess occupational risk and identify risk-reduction strategies in reproductive and child health (RCH) settings.
- Describe the management of occupational exposure to HIV including the administration of post-exposure prophylaxis.
- Identify measures to minimize stress and support healthcare workers (HCWs) and caregivers.

UNIT 1 Strategies to Prevent HIV Infection in the Healthcare Setting

UNIT OBJECTIVES

After completing the unit, the participant will be able to:

- Describe strategies for preventing HIV transmission in the healthcare setting.

Standard Precautions and Creating a Safe Work Environment

Basic concepts of HIV infection prevention

HIV and other bloodborne pathogens may be transmitted in healthcare settings from a patient to a HCW, from a HCW to a patient, or from a patient to a patient. HIV can be transmitted through contact with blood and other body fluids.

HIV transmission to HCWs is associated with exposure to blood or other body fluids through needlestick and other sharps injuries and splashes onto mucous membranes or non-intact skin (e.g., skin with bruises or abrasions) during the care of an HIV-infected patient. In practice, exposures may occur during the following procedures:

- Providing intravenous, subcutaneous and intramuscular injections
- Surgical procedures
- Inserting an intravenous line
- Drawing a blood sample (phlebotomy)
- Dialysis
- Transfusions

Patient-to-patient transmission of HIV infection can be prevented by proper processing of equipment and devices that are exposed to blood, tissue or body fluids or that are used in procedures in which the skin is punctured.

Proper infection prevention can create a safe work environment that protects HCWs. Creating a safe work environment involves managing the work environment, using Standard Precautions and providing ongoing education about infection prevention for employees.

Standard Precautions

Definition

Standard Precautions: A simple set of effective practices designed to protect HCWs and patients from infection with a range of pathogens, including bloodborne viruses. These practices are used when caring for **all** patients, regardless of diagnosis. Standard precautions create a physical, mechanical or chemical barrier between HCWs and patients and potentially infectious material.

Implementing standard precautions in practice means that HCWs observe and practice the following procedures in their facilities:

- Consider every person (patient or staff) as potentially infectious and susceptible to infection.
- Use appropriate hand hygiene techniques. These include washing hands with soap and clean water, using alcohol-based hand rubs and surgical hand scrubs.
- Wear personal protective equipment (PPE).

- Handle sharps, patient care and resuscitation equipment, and linen appropriately.
- Clean a patient's environment with care.
- Dispose of infectious waste materials appropriately to protect HCWs and the communities where infectious material is disposed.
- Process instruments by decontamination, cleaning and then either sterilization or high-level disinfection (HLD) according to the national guidelines.
- Apply waterproof dressings to cover all cuts and abrasions.
- Promptly and carefully clean spilt blood and other body fluids.

Creating a safe work environment also requires that HCWs are properly immunised against likely infectious agents. While there is no effective HIV vaccine, Hepatitis B vaccine is simple, effective and should be provided for all HCWs. For more information on immunisation and post-exposure prophylaxis for Hepatitis B, see Appendix 8–A: *Hepatitis B Immunisation and Prophylaxis*.

Hand Hygiene

Hand hygiene techniques significantly reduce the number of disease-causing microorganisms on hands and can minimize cross-contamination from a HCW to a patient. These techniques are a key component in minimizing the spread of disease and in maintaining an infection-free environment.

Hand hygiene techniques include:

- Washing hands with or without an antiseptic agent
- Surgical hand scrub
- Alcohol-based handrub

Handwashing 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, 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.

Handwashing with plain soap and running water for 20 seconds is one of the most effective methods for preventing transmission of bloodborne pathogens and limiting the spread of infection.

Alcohol-based handrubs

- 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.

Handwashing	
Perform before:	<ul style="list-style-type: none"> ▪ Putting on gloves ▪ Examining a patient ▪ Handling contaminated items such as dressings and used instruments ▪ Eating
Perform after:	<ul style="list-style-type: none"> ▪ Removing gloves ▪ Examining a patient ▪ Performing any procedure that involves contact with blood or other body fluids ▪ Handling contaminated items such as dressings and used instruments ▪ Making contact with body fluids, mucous membranes, non-intact skin or wound dressings ▪ Handling soiled instruments and other items ▪ Eating ▪ Using a toilet

Personal protective equipment

Personal protective equipment safeguards patients and staff. Use the following equipment when indicated:

- Gloves (surgical, clean examination, elbow-length or heavy duty gloves)
- Aprons
- Masks
- Protective eyewear
- Boots
- Gowns
- Caps

Personal protective clothing such as waterproof gowns, aprons and masks should be worn when there is a likelihood of exposure to large amounts of blood or body fluids such as in the operating theatre, labour and delivery ward or laboratory.

Gloves

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

HCWs should use gloves when:

- There is reasonable chance of hand contact with blood, other body fluids, mucous membranes or broken or cut skin.
- Handling items contaminated with blood, other body fluids or secretions.
- HCW has skin lesions on the hand.

Sterile gloves are required for surgical procedures and vaginal examinations during labour.

Tips for effective glove use

- Wear gloves that are the correct size.
- Use water-soluble hand lotions and moisturisers often to prevent hands from drying, cracking and chapping. Avoid oil-based hand lotions or creams because they will damage gloves.
- Do not wear rings because they may tear gloves and serve as a breeding ground for bacteria, yeast and other disease-causing microorganisms.
- Keep fingernails short (less than 3 mm beyond the fingertip). Long nails provide a breeding ground for bacteria, yeast and other disease-causing microorganisms. Long fingernails are also more likely to puncture gloves.
- Store gloves in a place where they are protected from extreme temperatures, which can damage the gloves.

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 or visors, protect the eyes from accidental splashes of blood or other body fluids. Eyewear is particularly useful in labour and delivery wards.

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. Avoid wearing sandals, thongs, or shoes made of soft materials.

Managing the work environment

Proper planning and management of the workplace environment is essential for reducing the occupational risks of HIV infection. The following policies and practices support a safe work environment. However, supervisors rely on HCWs to notify them when policies are not being followed. Some examples of how supervisors or management of facilities can create a safe work environment include:

- Implementing safe work practices (e.g., hands-free technique when passing or transferring sharps during procedures and no recapping of needles).
- Establish and implement policies and procedures for reporting and treating occupational exposure to HIV infection.
- Ensure that that post-exposure prophylaxis is available during all working hours.
- Provide handwashing facilities including running water, soap and single use towels for drying hands and other hand hygiene methods.
- Use proper housecleaning methods.
- Attain and maintain appropriate staffing levels.
- Ensure an adequate supply of PPE.
- Implement supportive measures that reduce staff stress, isolation and compassion fatigue/burnout.
- Acknowledge and address the many needs of HCWs who are HIV infected.
- Provide and use appropriate disinfectants to clean up spills involving blood or other body fluids.
- Increase availability of—and staff access to—puncture-resistant sharps containers (safety boxes).

- Use influential senior staff as role models to promote the use of personal protective equipment.

On-the-job training for employees in infection prevention and control

Supervisors and management of facilities are also responsible for training their HCWs in infection prevention and control. Topics to include in ongoing training of HCWs include:

- Awareness of the risks of exposure to bloodborne pathogens
- Understanding of transmission of bloodborne pathogens, with particular emphasis on HIV, Hepatitis B and Hepatitis C
- Identification and anticipation of situations where HCW may be exposed to bloodborne pathogens
- Teaching HCWs how to use and handle patient care equipment, personal protective equipment and linens correctly

Training requires that supervisors observe and assess how HCWs are implementing Standard Precautions.

Supervisors should correct unsafe practices in a non-threatening and supportive manner.

UNIT 2 Handling of Sharps, Contaminated Equipment and other Materials

UNIT OBJECTIVE

After completing the unit, the participant will be able to:

- Identify key steps and principles involved in the handling of sharps, contaminated equipment and other materials.

Handling and Decontamination of Equipment and Materials

Handling and disposal of sharps

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

Best and safe practices for using needles and sharps include:

- 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 using a Vacutainer or drawing blood with a needle and syringe for blood gas analysis, 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, burying or encapsulation. For more information see Appendix 8-B *Safe Disposal of Infectious Waste Materials*.
- Handle all laboratory specimens with care and wear gloves whenever performing a procedure.
- Holders must be used for all blades.
- Use hands-free technique when passing sharp instruments during surgical procedures.
- Always point the sharp away from oneself and from others.
- Pick up sharps one at a time. Never pass handfuls of sharps or needles.

When it is necessary to recap, use the single-handed scooping technique:

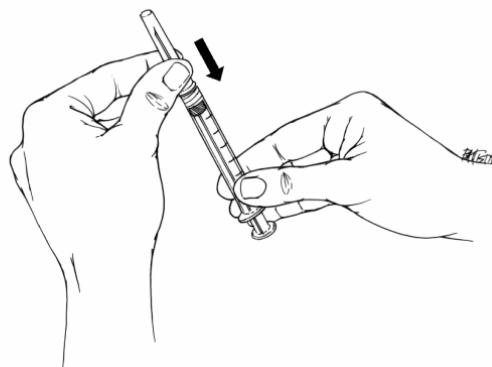
- Place the needle cap on a firm, flat surface.
- With one hand holding the syringe, use the needle to “scoop” up the cap, as shown in Step 1, Figure 8.1.
- With the cap now covering the needle tip, turn the syringe upright (vertical) so the needle and syringe are pointing toward the ceiling.
- Use the forefinger and thumb on your other hand to grasp the cap just above its open end and push the cap firmly down onto the hub (the place where the needle joins the syringe under the cap) (Step 2, Figure 8.1).

Figure 8.1 One-handed recap method:

Step 1: Scoop up the cap.



Step 2: Push cap firmly down.



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 (i.e., difficult to open or break).

Nationally, sharps containers also known as safety boxes, are yellow in colour. All sharps containers should be clearly marked “SHARPS” and/or have pictorial instructions for the use and disposal of the container. Sharps containers should be placed away from high-traffic areas and within arm’s reach of where the sharps will be used. In practice, this means that sharps containers should not be near light switches, overhead fans, or thermostat controls where people might accidentally put one of their hands into them. It is important not to reuse or recycle sharps containers for other purposes like garbage disposal.

- Dispose of sharps containers when $\frac{3}{4}$ full. Do not fill beyond $\frac{3}{4}$ full.
- Avoid shaking a container to settle its contents to make room for more sharps.

Proper handling of soiled linen

Staff handling soiled linens should be appropriately trained and supervised regularly. Each healthcare facility should determine the best way to handle, process and store linens.

Key steps in the proper handling, processing and storage of linens include:

- Housekeeping and laundry personnel should wear utility gloves and other personal protective equipment as indicated when collecting, handling, transportation, sorting and washing soiled linen.
- When collecting and transporting soiled linen, handle it as little as possible and with minimum contact to avoid accident injury and spreading of microorganisms.
- Consider all cloth items (e.g., surgical drapes, gowns, wrappers) used during a procedure to be infectious.
- Even if there is no visible contamination to linens they must be laundered.
- Carry soiled linen in covered containers or plastic bags to prevent spills and splashes.
- Keep the soiled linen in designated areas (interim storage area) until transported to the laundry.
- Carefully sort all linen in the laundry area before washing. Do not pre-sort or wash linen at the point of use.
- When hand washing soiled linen:
 1. Use warm water if available.
 2. Add bleach (e.g., 30-60 mL, about 2-3 tablespoons, of a 5% chlorine solution) for ten minutes to aid cleaning and bactericidal action.
 3. Add soap (a mild acid agent) to prevent yellowing of linen, if desirable.
- Patient's soiled personal linen should be decontaminated before handling back to the patient/relatives.
- The patient 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. The recommended steps to reduce disease transmission from soiled instruments and other reusable items are **decontamination, cleaning** and either **sterilization** or **high-level disinfection (HLD)**.

Definitions

Decontamination: The first step in processing instruments and other items to make them safer to handle by the cleaning staff. This requires a 10-minute soak in a 0.5% chlorine solution. This important step kills Hepatitis B, C and HIV.

The following chart shows how to prepare a 0.5% chlorine solution from pre-made solutions.

Brand of Bleach, % chlorine	To obtain a 0.5% chlorine solution
Household bleach, 5% chlorine	1 part household bleach to 9 parts water
Jik 3.5% chlorine	1 part Jik bleach to 6 parts water

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

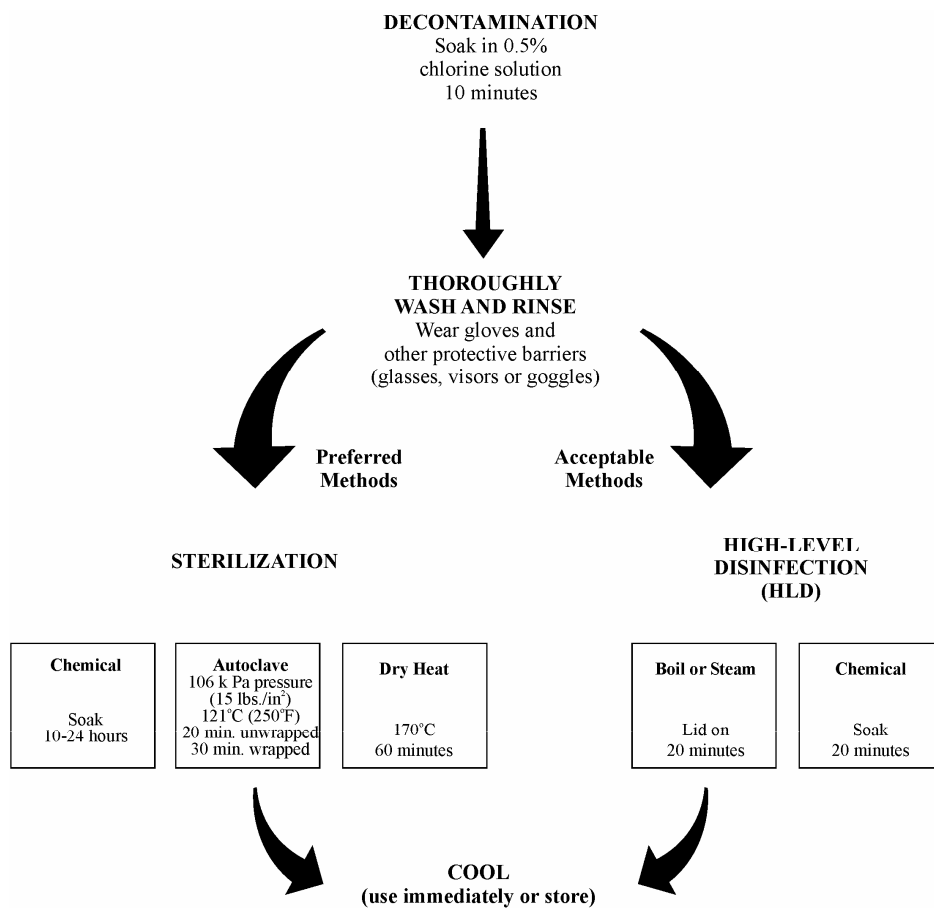
Cleaning: A process that physically removes all visible dust, soil, blood, or other bloody fluids from objects. It consists of thoroughly washing with soap or detergent and water using a brush and then rinsing with clean water and drying.

High-level disinfection (HLD): Process that eliminates all microorganisms, except some bacterial endospores from inanimate objects, by boiling, steaming, or the use of chemical disinfectants. See Appendix 8-D *Steps in High-level Disinfection (HLD)* for the steps in high-level disinfection.

Sterilization: Process that eliminates all microorganisms (bacteria, viruses, fungi and parasites), including bacterial endospores, from objects by high-pressure steam (autoclave), dry heat (oven) or with chemical sterilants.

For more information on the different types of sterilization techniques, see Appendix 8-E *Types of Sterilization Techniques*.

Figure 8.2 - Summary of key steps in Instrument Processing



Risk reduction in the obstetric setting

The potential for exposure to HIV-contaminated blood and other body fluids is high during labour and delivery. Module 5, *Specific Interventions to Prevent MTCT*, includes information on safer obstetric practices designed to minimize this risk.

In labour and delivery settings, HCWs should:

- Provide appropriate and sensitive care to all women *regardless of HIV status*.
- Work in a manner that ensures safety and reduces the risk of occupational exposure for themselves and their colleagues.

Tips for reducing the risk of occupational exposure in the obstetric setting

- Cover broken skin or open wounds with watertight dressings.
- Wear suitable gloves when exposure to blood or other body fluids is likely.
- Wear double 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- the “hands-free” technique.
- Cover the infant’s umbilical cord with a gloved hand or gauze before cutting.
- Use elbow-length or gauntlet gloves during manual removal of a 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 using 0.5% chlorine solution.
- Dispose of solid waste (e.g., blood-soaked dressings and placentas) safely according to facility procedures.
- Clean foetalscope and stethoscope with spirit after every patient.

Safe work practices

Proper planning and management of supplies and other resources are essential in reducing the occupational risks of HIV infection. To reduce occupational risks health facilities should:

- Assess risks in the work setting.
- Explore different strategies for meeting resource needs.
- Develop standards and guidelines that address safety, risk reduction, post-exposure prophylaxis (PEP) follow-up and first aid.
- Maintain an optimal workload.
- Institute measures to prevent or reduce HCW stress.
- Orient new staff to recommended infection prevention and control practices.
- Provide ongoing staff education and supervision.

Exercise 8.1 Promoting a Safe Work Environment Resource List: Group discussion	
Purpose	To compare and contrast the availability of safety resources, practices and materials in our PMTCT programmes.
Duration	20 minutes
Instructions	<ul style="list-style-type: none"> ▪ Refer to <i>the “Promoting a Safe Work Environment” Resource List</i> below. ▪ The trainer will lead a group discussion on each of the categories in the resource list. Share in the large group discussion, which supplies or resources in each category are available in your work setting. Describe strategies used when these supplies or resources are in short supply.

Exercise 8.1 “Promoting a safe environment” resource list	
Personal protective equipment	
<ul style="list-style-type: none"> ▪ Gloves—various sizes and types ▪ Aprons ▪ Eyewear ▪ Boots ▪ Waterproof dressings for covering cuts and abrasions 	
Materials	
<ul style="list-style-type: none"> ▪ Cleaning and disinfecting agents ▪ Equipment for sterilisation ▪ Sharps disposal containers/yellow safety boxes ▪ Waterproof waste containers for contaminated items ▪ Alcohol-based hand rubs or soap and clean water 	
Safety standards	
<ul style="list-style-type: none"> ▪ Policies on use of Standard Precautions ▪ Procedures for disposal of infectious or toxic waste ▪ Procedures for sterilisation of equipment ▪ Policies on handling and disposal of sharps and other infectious waste ▪ Guidelines for management of exposures to HIV and Hepatitis B (use of antiretroviral medications as post-exposure prophylaxis and Hepatitis B immunisation and immunoglobulin) ▪ Procedures for minimising exposure to infection in high-risk settings, such as labour and delivery 	
Education	
<ul style="list-style-type: none"> ▪ New employee orientation to infection prevention and control ▪ Ongoing training to build skills in safe handling of equipment ▪ Monitoring and evaluation of safety practices to assess implementation and remedy deficiencies 	

Exercise 8.2 Reducing HIV Transmission Risk in RCH settings: Case study	
Purpose	To review the application of Standard Precautions in a high-risk setting
Duration	45 minutes
Instructions	Refer to the two Case Studies below. The trainer will lead the group in reading each paragraph of the Case Study. After each paragraph, discuss which Standard Precaution applies to the paragraph.

Case Study 1

Part A

Imelda arrives at the labour and delivery unit of your hospital. She hands you a small card that identifies her as someone who has received care at the neighbouring ANC clinic. This card is coded with “PMTCT1” to let you know that she is HIV-infected. She explains that her contractions are steady and about four minutes apart. You perform a vaginal examination and estimate that Imelda has at least 2 more hours until delivery. You give her nevirapine prophylaxis at this time.

1. *What are some precautions that you, as a HCW, should take when treating Imelda?*
2. *Should HCWs use gloves when caring for patients who are HIV-infected?*
3. *According to Standard Precautions, would the same gloving requirements apply for all labour and delivery patients, regardless of HIV status?*
4. *In your facility, is there a good supply of gloves and antiseptics in the labour ward?*
5. *What do we know about the relationship between MTCT and vaginal examinations for pregnant HIV-infected women?*

Part B

Imelda is now fully dilated and ready to deliver. As the head is delivered, you use gauze to carefully free the infant’s mouth and nostrils of fluids. Then, with one final push, the infant is delivered completely. You hand the newborn to a gloved assistant, who wipes him dry and continues with newborn care. Then the placenta is delivered.

1. *Itemise the protective clothing that would be appropriate in a labour and delivery setting.*
2. *At your facility, what are the policies for disposing of waste materials?*
3. *What should be done with the placenta and other contaminated materials?*

Part C

Imelda was your 30th delivery in the past 24 hours. You need to get home and attend to your family but your replacement has not yet arrived. You speak with your supervisor and she is able to locate someone else to take your place.

1. *Why is it important that you not stay and continue to work tonight?*
2. *In your facility, do you have someone who will help you find staffing relief when needed?*

Case Study 2

Suma is a home birth attendant you have known for many years. She tells you that she suspects one of her patients will not have the time to travel to a nearby hospital before delivery. Suma knows the patient personally and is aware that she is HIV-infected. The woman received nevirapine during her one and only ANC visit so that the baby will not get HIV infection. Suma needs to help her patient deliver the baby at home in a few hours.

1. *As a nurse trained in PMTCT and Standard Precautions, what are some tips you can give Suma so that she is able to protect herself during the home delivery?*
2. *What are some ways that Suma can minimize the risk of HIV transmission during labour and delivery?*

UNIT 3 Managing Occupational Exposure to HIV

Unit Objectives

After completing the unit, the participant will be able to:

- Assess occupational risk and identify risk-reduction strategies in reproductive and child health (RCH) settings.
- Describe the management of occupational exposure to HIV including the administration of post-exposure prophylaxis.

Post-exposure Prophylaxis

Definition

Post Exposure Prophylaxis (PEP) is short-term antiretroviral treatment to reduce the likelihood of HIV infection after exposure to potentially infected blood or other body fluids.

The risk of occupational exposure

The risk of contracting a blood borne disease like HIV varies depending on the type of exposure. The risk after percutaneous injury (defined as an injury resulting from a needle stick or a cut from a sharp object) is estimated to be 0.3%. That is to say that out of 1000 needle sticks, only 3 will likely result in HIV infection. The risk after a mucous membrane (of the eyes, nose, mouth) exposure is 0.09%. The risk for non-intact skin (i.e., abrasions, dermatitis, bruises) is not known but estimated to be lower than for mucous membrane exposure. These estimates have been generated from the experience of western countries. The risk of infection from a needlestick is likely to be higher in resource-constrained settings, where patients have a higher viral load or undiagnosed HIV, and where personal protective equipment may be in short supply.

Factors influencing the risk of exposure

- The depth of the injury (in case of a sharp object)
- Whether the device was visibly contaminated with blood
- Whether the procedure involved placing a needle directly in an artery or vein
- Whether the needle was a hollow bore needle or a solid needle (e.g. suture needle)
- The size of the needle (large versus small gauge)
- The patient's viral load (i.e. amount of HIV in the circulation)
- The amount of blood or infectious fluid involved in the exposure
- The duration of the exposure

Management of an occupational exposure

One person per facility should be responsible for initiating the PEP protocol with a second responsible party assigned as back-up. All HCWs, including maintenance and cleaners, need information about when and how to use PEP. PEP must also be available during all working hours (day and night including weekends), ensuring that the ARV medications needed are not locked away. As with all HIV testing, results following an exposure should be kept confidential.

Steps in post-exposure management

The various steps following an injury by a potentially infectious object include the following:

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.
 - If running water is not available, clean site with an alcohol-based handrub.
 - Exposure to the eye: flush exposed eye immediately with water or normal saline, if available.
 - Exposure to the mouth: spit the fluid out 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 person in charge of PEP and his or her immediate supervisor.
- An injury report form should be filled out as soon as possible.

Step 3: Establish eligibility for PEP

All occupational exposures do not carry equal risk. Some exposures carry very little risk of HIV transmission; others carry a higher risk. For example, an injury that is bleeding spontaneously following a puncture by a large hollow bore needle that has been used to draw blood from a vein poses a relatively high risk of transmission. Splashes by body fluids other than blood onto skin intact surfaces pose very little risk. Most exposures do not fall neatly into a high or low risk category.

A trained person should undertake 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 if any immediate action is required. If the risk is assessed as “not significant”, complete an injury report form. No further action is required.

Assessing the level of risk of HIV transmission

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 (i.e., bruises)
 - What is the condition of the skin?
 - How long was the skin in contact with the infected blood or bodily fluid?

Severity of exposure

A *high risk* exposure is associated with the following characteristics:

- Large quantity of blood:

- Device visibly contaminated with source patient’s blood
- Procedure involving needle placed directly into patient’s vein or artery
- Deep injury
- Injury with hollow bore needle
- High viral load in source patient
 - Acute infection
 - Advanced HIV disease (AIDS)

A *low risk* exposure is associated with the following characteristics:

- 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

HIV testing of the source patient (if possible) can help determine the need for PEP and may avert the unnecessary use of ARV medications, which can have adverse side effects.

- If the source can be identified and contacted, HIV testing should be performed immediately with the person’s consent. HIV testing should follow standard HIV testing and counselling guidelines.
- If the source is unable to be contacted, or unable to consent to HIV testing, assess the likelihood of the source being HIV-positive. If there is a possibility that the source patient could be HIV-infected, and the injury is significant, PEP should be started in the absence of source patient’s test results.
- Testing discarded needles or syringes for the HIV virus is not recommended.
- If the source person is HIV positive, initiate (or continue) PEP.
- If 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 is in the window period.

HIV status of HCW

- The exposed HCW will need HIV testing and counselling to determine if PEP is actually warranted. If the exposed worker’s test result is positive, there is no need to continue (or initiate) PEP because a positive result would indicate that he or she was infected with HIV prior to the incident. Continuing with PEP might create drug resistance. The HIV-infected HCW should be referred to a care and treatment clinic for evaluation while ensuring that confidentiality is maintained.

Step 4: Prescribe and dispense PEP medications

- If the exposure is assessed as “significant”—and HCW gives informed consent—give first dose of post-exposure prophylaxis of ARV medications as soon as possible after an exposure.
- ARV medications should be prescribed within 1-2 hours and no later than 72 hours of exposure.
- ARV medications should be prescribed by an experienced HCW in accordance with national or facility PEP guidelines.

When to start the PEP regimen
PEP should be started as soon as possible after the injury, ideally within 2 to 4 hours. The ARV medications used in the PEP regimen stop the virus from multiplying in the body, so the earlier they are taken, the better the chance they have to be effective in preventing HIV infection.

ARV medications to be used for PEP

Because of the need to start PEP as soon as possible after exposure, a minimum of two doses of ARV prophylaxis should be on hand and accessible at the facility at all times. The recommended ARV regimen according to risk category is shown below.

Risk Category	ARV Prophylaxis	Duration
Low risk	AZT 300 mg twice a day <i>and</i> 3TC 150 mg twice a day (Fixed dose combinations of above medications*)	28 days
High risk	AZT 300 mg twice a day <i>and</i> 3TC 150 mg twice a day* <i>and</i> EFV 600mg mg each night on an empty stomach <i>For pregnant women, replace EFV with LPV/r 133.3mg/33.3mg – 3 capsules, twice daily)</i>	28 days

* Fixed dose combinations include Combivir (AZT 300mg and 3TC 150mg) or Duovir, 1 tablet twice a day.

Appendices 8-F, 8-G and 8-H provide more detailed recommended regimens for PEP nationally.

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 *Module 7 Comprehensive Care and Support for Pregnant Women, Mothers and Families with HIV Infection*. HCWs receiving PEP should be referred to a counsellor and a HIV specialist for follow-up including counselling on the management of ARV medication side effects.

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, HIV testing, monitor and manage ARV toxicity

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

HCWs 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.

HCWs should be counselled about safer sex practices following the exposure until HIV infection can be ruled out at 6 months. Female HCWS should be also 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 not donate blood, plasma, organs, tissue or semen until infection can be ruled out.

UNIT 4 Supportive Care for the Healthcare Worker

Unit Objective

After completing the unit, the participant will be able to:

- Identify measures to minimize stress and support healthcare workers (HCWs) and caregivers.

Care for the Healthcare Worker

Burnout: A psychological syndrome characterized by overwhelming exhaustion, feelings of cynicism and detachment from the job and a sense of ineffectiveness. (Maslach, Schaufeli and Leiter, 2001)

Burnout

HCWs, who provide ongoing care to HIV-infected pregnant women and their infants are vulnerable to “burnout.”

Burnout syndrome stems from extended exposure to intense job-related stress and strain. Burnout syndrome is characterized by:

- Emotional exhaustion: feelings of helplessness, depression, anger and impatience
- Depersonalisation: losing interest in one’s job and an increasingly negative view of patients and co-workers
- Decreased productivity due to a real or imagined sense that their efforts are not worthwhile and do not seem to have an effect

Signs and symptoms of burnout	
<p>Behavioural</p> <ul style="list-style-type: none"> Frequent changes in mood Eating too much or too little Drinking alcohol and/or smoking too much Becoming “accident prone” <p>Cognitive and Psychological</p> <ul style="list-style-type: none"> Unable to make decisions Forgetful, poor concentration Sensitive to criticism 	<p>Physical</p> <ul style="list-style-type: none"> High blood pressure Palpitations, trembling Dry mouth, sweating Stomach upset <p>Occupational</p> <ul style="list-style-type: none"> Taking more days off Arguing with co-workers Working more hours but getting less done Having low energy, being less motivated

Job-related risks for burnout

- Work overload, limited or no breaks
- Long working hours
- Poorly structured work assignment (worker not able to use skills effectively)
- Inadequate leadership and support
- Lack of training and skill-building specific to the job

Personal risks for burnout

- Unrealistic goals and job expectations
- Low self-esteem
- Anxiety
- Caring for patients with a fatal disease

Personal strategies for minimising or preventing burnout syndrome

- Seek support from others.
- Take care of yourself.
- Engage in restorative activities, such as reading or exercising.

Tips for managing burnout	
	<ul style="list-style-type: none"> ▪ Find or establish a support group of peers. This could include establishing a link with existing networks of people who work with HIV patients, such as staff at the CTC. ▪ Seek assistance from someone who is more experienced and can confidentially support you, listen to you and guide you. ▪ Read books that provide strategies for coping with stress. ▪ Take a course to learn about a subject relevant to your work (or take a refresher course on a previously studied subject). ▪ Take structured breaks during work hours. ▪ Make time for yourself and your family and for relaxation. ▪ Exercise, eat properly and get enough rest.

Exercise 8.3 Burnout in PMTCT Programmes: Large group discussion	
Purpose	To examine causes of burnout and develop creative prevention strategies.
Duration	30 minutes
Instructions	<ul style="list-style-type: none"> ▪ Share some of the factors that contribute to burnout in the PMTCT setting and some creative strategies to prevent burnout. ▪ Consider the questions below as you participate in the group discussion. ▪ Share stories and personal experiences about compassion fatigue and burnout with the group and consider ways to address burnout.

Exercise 8.3 Questions for discussion

1. What is the greatest daily challenge in your clinical setting?
2. How does your facility support and assist staff?
3. Is there someone you can turn to for help with your workplace concerns?
4. Are you connected to community services that make your job easier?
5. Do you have your own source of peer support? Who are your supporters?
6. Do you use your own stress-reduction techniques that work well for you?
7. What are three things that would make your job easier and less stressful?
8. Comment on staffing for HIV testing and counselling at your facility. Are there enough counsellors? What are the training requirements?
9. Does your facility orient staff to the workplace?
10. Does your agency provide ongoing education to ensure adequate, updated skills?
11. Does your organisation ensure that staff has all the necessary supplies and materials?

Module 8: Key Points

- Standard Precautions apply to all patients, regardless of diagnosis. Key components include:
 - Considering every person (patient or HCW) as potentially infectious or susceptible to infection.
 - Hand hygiene techniques that include handwashing with soap and clean water or using an antiseptic agent (hand antisepsis), alcohol-based hand rub or surgical hand scrub.
 - Correct use of personal protective equipment including gloves, masks, protective eyewear, caps, gowns, boots and aprons.
 - Appropriate handling of sharps, patient care and resuscitation equipment and linen.
 - Safe disposal of infectious waste materials including sharps to protect those who handle them and prevent injury or spread to the community.
 - Correct processing of instruments by decontamination, cleaning and then either sterilization or high-level disinfection (HLD).
- Infection prevention and control measures also include safe management of the work environment and ongoing job training for healthcare workers in infection prevention and control.
- The most common source of HIV transmission in the workplace is from injury that breaks the skin with an instrument used on an HIV-infected client (e.g., a puncture from a needle or a cut from a sharp object like razor or scalpel).
- During labour and childbirth, safer delivery practices and Standard Precautions reduce the risk of occupational exposure.
- Post-exposure prophylaxis (PEP) is short-term antiretroviral treatment that reduces the risk of HIV infection after occupational exposure.
- Burnout is related to intense, prolonged job stress but can be managed and the effects minimized by individual and organisational support.

APPENDIX 8-A Hepatitis B Immunisation and Prophylaxis

Immunisation

Immunisation of all healthcare workers 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 of the liver and hepatocellular carcinoma. HBV vaccines are cost effective and widely available.

It is unnecessary to check whether a HCW is immune to Hepatitis B before giving the immunisation.

A standard three-month course is recommended for immunisation

- Dose #1
- Dose #2 – given one month later
- Dose #3 – 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 if the HCW has developed immunity to HBV (i.e., if they are good responders to Hepatitis B vaccine). An anti-HBs serologic level of $\geq 10\text{mIU/mL}$ indicates immunity. An anti-HBs serologic level of $< 10\text{mIU/mL}$ is a negative serologic test and means that the HCW is a non-responder.

Boosters are not indicated.

Occupational Exposure Management

In case of occupational exposure to Hepatitis B virus, prophylaxis is indicated for HCWs who are susceptible (defined as having no Hepatitis B antibodies and no history of receiving immune serum globulin)

Steps for managing an occupational exposure to HBV:

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

APPENDIX 8-B Guidelines for safe disposal of infectious waste materials

The purpose of proper waste management is to:

- Protect people who handle waste items from injury.
- Prevent the spread of infection to healthcare workers and to the local community.

Staff working in PMTCT sites are responsible for segregating waste properly.

The five 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: <ul style="list-style-type: none"> ▪ Needles ▪ Syringes ▪ Blades ▪ Broken glass ▪ Lancets ▪ Scissors ▪ Ampoules ▪ Slides and slide covers
Red	Wet, infectious materials: <ul style="list-style-type: none"> ▪ Blood ▪ Body tissues (amputations) ▪ Body fluids (discharges) and specimens (stool and sputum) ▪ Placentas ▪ Wet dressings ▪ Catheters ▪ Blood infusion bags
Blue/Black	Non-infectious materials: <ul style="list-style-type: none"> ▪ Office papers ▪ Pharmaceutical packaging ▪ Plastic bottles (including water bottles) ▪ Food remains ▪ Waste paper ▪ Rubbish

APPENDIX 8-B Guidelines for safe disposal of infectious waste materials *(continued)*

Safe disposal of sharps

Disposable sharp items, such as hypodermic needles, require special handling because they are the items most likely to injure HCWs. If these items are disposed of in the municipal landfill, they are a danger to the community.

Note the following to dispose of sharps containers safely:

- Wear heavy-duty gloves.
- When the sharps container is three-quarters full, completely seal the opening of the container using a cap, a plug, or tape.
- Be sure that no sharp items are sticking out of the container.
- Dispose of the sharps container by burning, encapsulating, or burying it.
- Remove the heavy-duty gloves.
- Wash your hands and either air dry them or dry them with a clean cloth.

Burning waste containers (incineration)

High-temperature burning destroys waste and kills microorganisms. This method reduces the bulk volume of waste and ensures that the items are not scavenged and reused. The ashes and other remains should be removed from the crate and buried in an ash pit.

Encapsulating waste containers

Encapsulation is the easiest way to dispose of sharps safely. In this method, collect sharps in puncture-resistant and leak-proof containers. When the container is three-quarters full, pour a material such as cement (mortar), plastic foam, or clay into the container until completely filled. After the material has hardened, seal the container and dispose it in a landfill, store it or bury it.

Burying waste

In healthcare facilities with limited resources, safe burial of waste on or near the facility may be the only option available for waste disposal. Take the following precautions to limit health risks:

- Restrict access to the disposal site. Build a fence around the site to keep animals and children away.
- Line the burial site with a material of low permeability (e.g., clay or cement), if available.
- Select a site at least 30 meters away from any water source to prevent contamination of the water table.
- Ensure that the site has proper drainage, is located downhill from any wells, is free of standing water and is not in a flood-prone area.
- The bottom of the burial pit should be at least 1.5 meters above the groundwater level during the wet season.

This appendix includes original material and material adapted from the National Infection Prevention and Control Guidelines for Healthcare Services in Tanzania and the following:

- Tietjen, Bossemeyer, McIntosh. *Prevention: Guidelines for Healthcare Facilities with Limited Resources*. JHPIEGO Corporation, Baltimore, March 2003. http://www.reproline.jhu.edu/english/4more/rh/4ip/IP_manual/ipmanual.htm
- International Council of Nurses, World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS). 2000. *Fact Sheet 11 HIV and the workplace and Universal Precautions (Fact sheets on HIV/AIDS for nurses and midwives)*, http://www.who.int/health-services-delivery/hiv_aids/English/fact-sheet-11/index.html
- World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS). 1999. *HIV in Pregnancy: A Review*. Pp 39–42. Retrieved 3 June 2004, from http://www.who.int/reproductive-health/publications/rhr_99_15/rhr99-15.pdf
- National Infection Prevention and Control Guidelines for Healthcare Services in Tanzania; MoH November 2004.

APPENDIX 8-C 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

1. Formula for Making a Dilute Solution from a Concentrated Solution

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

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

$$\text{Total parts water} = \left[\frac{3.5\%}{0.5\%} \right] - 1 = 7. \quad 7 - 1 = 6.$$

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: Make a dilute solution of 0.1% from 5% concentrated solution.

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

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

2. 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):

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

Add 14.2 grams (approximately 14g) 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: 1g of available chlorine per tablet. To make a solution of 0.5% chlorine, dissolve 20 tablets/litre.

APPENDIX 8-D Steps in High-level Disinfection (HLD)

High-level Disinfection (HLD)

HLD is the process that destroys all micro-organisms (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.

Sterilization, which kills all micro-organisms 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 sterilization is not available, HLD is the **only** acceptable alternative.

HLD can be performed by: Boiling; soaking in chemicals; and steaming.

A. 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 immerse all items in the water in the pot or boiler (water should be at least 2.5 cm 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 sidewalls and other items being boiled. Lower heat also saves fuel or electricity.

Step 5

After 20 minutes, remove the items using dry, HLD pickups (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 time to air-dry.

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 down.

APPENDIX 8-D Steps in High-level Disinfection (HLD) *(continued)*

B. 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 it 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 the 0.5% chlorine solution as described in Appendix 8-C *Preparing Chlorine Solutions for Decontamination*. 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, HLD pickups (lifters, cheater forceps).

Step 6

- Rinse thoroughly (3 times or more) with **sterile** water to remove the residue that chemicals leave on items. 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-E Types of Sterilization Techniques

Sterilization eliminates **all** micro-organisms (bacteria, viruses, fungi and parasites), including bacterial endospores, from instruments and other items. Sterilization 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.

Sterilization can be performed using:

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

Heat (autoclaving/steam and dry heat) is the most effective method of sterilization 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 is the alternative method where heat cannot be used, e.g., ethylene oxide and glutaraldehyde.

Sterilization by Heat

Remember: exposure time begins when the sterilizer has reached the target temperature. Do not overload the sterilizer--leave at least 7.5 cm between items and walls of sterilizer.

A. Dry Heat

Time/Temperature: 1 hour at 170°C (340°F) and then cooling. Total cycle time is 2 to 2.5 hours

2 hours at 160°C (320°F) and then cooling. Total cycle time is 3 to 3.5 hours

2½ hours at 150°C (300°F)

3 hours at 140°C (285°F)

B. Steam Heat

Time: 20 minutes (or 30 minutes if items are wrapped)

Temperature: 121°C (250°F)

Pressure: 106 K Pa (15 lbs/sq inch)

Allow all items to dry before removing from the sterilizer.

C. Sterilization by Chemicals (Cold Sterilization)

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

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

Follow the manufacturer's instructions regarding the time necessary for sterilization 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.

APPENDIX 8-E Types of Sterilization Techniques *(continued)*

Remove the instruments and other items from the solution using large, sterile pickups (lifters, cheatle forceps).

Rinse thoroughly with **sterile** water to remove the residue that chemical sterilants leave on instruments and other items; this residue is 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 to air-dry before use or storage. Use the instruments and other items immediately or keep in a covered, dry, sterile container and use within one week.

APPENDIX 8-F Recommendations for chemoprophylaxis after accidental exposure to HIV

TYPE OF EXPOSURE	SOURCE OF MATERIAL+	ANTIRETROVIRAL PROPHYLAXIS+	ANTIRETROVIRAL REGIMEN****
Percutaneous	Blood+++		
	Highest risk	Recommend	ZDV plus 3TC plus EFV or NVP
	Increased risk	Recommend	ZDV plus 3TC, +/- EFV or NVP
	No increased risk	Offer	ZDV plus 3TC
	Fluid containing visible blood, other potentially, infectious fluid++, or tissue	Offer	ZDV plus 3TC
Mucous Membrane	Blood	Offer	ZDV plus 3TC +/- EFV or NVP
	Fluid containing visible blood, other potentially infectious fluid ++, or tissue	Offer	ZDV plus 3TC
	Other body fluid (e.g., urine)	Do not offer	Do not offer
Skin	Increased risk**** Blood	Offer	ZDV plus 3TC, +/- EFV or NVP**
	Fluid containing visible blood, other potentially infectious fluid ++, or tissue	Offer	ZDV plus 3TC
	Other body fluid (e.g., urine)	Do not offer	Do not offer

* Any exposure to concentrated HIV (e.g., in a research laboratory or production facility) is treated as per-cutaneous exposure to blood with highest risk.

+ **Recommend** – Post-exposure prophylaxis (PEP) should be recommended to the exposed worker with counseling

Offer—PEP should be offered to the exposed worker with counseling

Not offer—PEP should not be offered because these are not occupational exposures to HIV.

*** Regimens: Zidovudine (ZDV) 300mg twelve hourly; Lamivudine (3TC), 150 mg twelve hourly; Efavirenz 600mg nocte or Nevirapine 200mg 12 hourly. Prophylaxis is given for 4 weeks.

+++ **Highest risk**—BOTH larger volume of blood (e.g., deep injury with large diameter hollow needle previously in source patient's vein or artery, especially involving an injection of source-patient's blood) AND blood containing a high titer of HIV (e.g., source with acute retroviral illness or end-stage AIDS)

Increased risk—EITHER exposure to larger volume of blood OR blood with a high titer of HIV.

No increased risk—NEITHER exposure to larger volume of blood NOR blood with a high titer of HIV (e.g., solid suture needle injury from source patient with asymptomatic HIV infection)

**Possible toxicity of additional drug may not be warranted

++ Includes semen; vaginal secretions; cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids.

**** For skin, risk is increased for exposures involving a high titer of HIV, prolonged contact, an extensive area, or an area in which skin integrity is visibly compromised. For skin exposures without increased risk, the risk for drug toxicity outweighs the benefit of PEP.

++ Recommended 2 drug PEP for adults in Tanzania is AZT 300mg 12hourly and 150mg 3TC 12hourly for 4 weeks.

+++ Recommended expanded 3 drug PEP for adults in Tanzania is AZT 300mg 12 hourly, 150mg 3TC 12 hourly and 600mg Efavirenz nocte or 200mg Nevirapine 12 hourly for 4 weeks.

Source: Tanzania National Guidelines for the Clinical Management of HIV and AIDS. April 2005, p. 120.

APPENDIX 8-G Recommended HIV post-exposure prophylaxis regimens for injuries

INFECTION STATUS OF THE SOURCE					
Exposure type	HIV-positive Class 1 ⁺	HIV-positive Class2 ⁺	Source of Unknown HIV status [†]	Unknown source [§]	HIV- Negative
Less severe [¶]	Recommend basic 2-drug PEP ⁺⁺	Recommend expanded 3-drug PEP	Generally, no PEP warranted however, consider basis 2- drug PEP ^{**} for source with HIV risk factors	Generally, no PEP warranted; however, consider basic 2-drug PEP ^{**} in setting where exposure to HIV infected persons is likely	No PEP warranted
Large volume ^{§§}	Recommend expanded 3-drug PEP ⁺⁺⁺	Recommend expanded 3 drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP ^{**} for source with HIV risk factors ⁺⁺	Generally, no PEP warranted; however, consider basic 2- drug PEP ^{**} in setting where exposure to HIV-infected persons is likely	No PEP warranted

+Class 1 — asymptomatic HIV infection or known low viral load (e. g., <1,500 RNA copies/ mL).

Class 2 - symptomatic HIV infection, AIDS, acute sero-conversion, or known high viral load.

If drug resistance is a concern, obtain expert consultation. Initiation of post exposure prophylaxis (PEP) should not be delayed pending expert consultation, and, because expert consultation alone cannot substitute for face- to- face counselling, resources should be available to provide immediate evaluation and follow- up care for all exposures.

† Source of unknown HIV status (e. g., deceased source person with no samples available for HIV testing).

§ Unknown source (e. g., a needle from a sharps disposal container).

¶ Less severe (e. g., solid needle and superficial injury).

** The designation "consider PEP" indicates that PEP is optional and should be based on an individualized decision between the exposed person and the treating clinician. If PEP is offered and taken and the source is later determined to be HIV- negative, PEP should be discontinued.

§§ More severe (e. g., large- bore hollow needle, deep puncture, visible blood on device, or needle used in patient's artery or vein).

Source: Tanzania National Guidelines for the Clinical Management of HIV and AIDS. April 2005, p. 121.

APPENDIX 8-H Recommended HIV post-exposure prophylaxis regimens for mucous membrane exposure and non-intact skin* exposure

INFECTIOUS STATUS OF THE SOURCE

Exposure type	HIV-positive Class 1 [†]	HIV-positive Class 2 [†]	Source of unknown HIV status [§]	Unknown source [¶]	HIV- Negative
Small volume ^{**}	Consider basic 2-drug PEP ^{††}	recommend basic 2-drug PEP	Generally, no PEP warranted however, consider basic 2- drug PEP ^{††} for source with HIV risk factors	Generally, no PEP warranted; however, consider basic 2-drug PEP ^{††} in setting where exposure to HIV infected persons is likely	No PEP warranted
Large volume ^{§§}	Recommend basic 2-drug PEP	Recommend expanded 3 drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP ^{††} for source with HIV risk factors	Generally, no PEP warranted; however, consider basic 2- drug PEP ^{††} in setting where exposure to HIV-infected persons is likely	No PEP warranted

* For skin exposures, follow- up is indicated only if there is evidence of compromised skin integrity (e. g., dermatitis, abrasion, or open wound).

† HIV- Positive:

Class 1 — asymptomatic HIV infection or known low viral load (e. g., <1,500 RNA copies/ mL)

Class 2 - symptomatic HIV infection, AIDS, acute seroconversion, or known high viral load. If drug resistance is a concern, obtain expert consultation. Initiation of postexposure prophylaxis (PEP) should not be delayed pending expert consultation, and, because expert consultation alone cannot substitute for face- to- face counselling, resources should be available to provide immediate evaluation and follow- up care for all exposures.

§ Source of unknown HIV status (e. g., deceased source person with no samples available for HIV testing).

¶ Unknown source (e. g., splash from inappropriately disposed blood).

** Small volume (i. e., a few drops).

†† The designation, "consider PEP," indicates that PEP is optional and should be based on an individualized decision between the exposed person and the treating clinician. If PEP is offered and taken and the source is later determined to be HIV- negative, PEP should be discontinued.

§§ Large volume (i. e., major blood splash).

Source: Tanzania National Guidelines for the Clinical Management of HIV and AIDS. April 2005, p. 122.

Field Visit and Clinical Practicum



Total Field Visit and Practicum Time: 20 hours (2½ days)*

After completing the field visit, the participant will be able to:

- Describe PMTCT activities in a health facility setting.

After completing the clinical practicum, the participant will be able to:

- Practice effective communication and critical thinking skills needed for the delivery of services for the prevention of mother-to-child transmission of HIV.

UNIT 1 Field Visit

After completing the field visit, the participant will be able to:

- Describe PMTCT activities in a health facility setting.

Field Visit

The field visit offers an opportunity to:

- Observe the implementation of integrated PMTCT services in facilities such as maternal and child health, family planning, labour and delivery, and postpartum follow-up.
- The objectives may include any of the following:
 - To observe an HIV group information session
 - To observe an individual HIV counselling session
 - To observe rapid HIV testing
 - To observe HCWs give support to a patient who is HIV-infected
 - To observe HCWs give advice and support on ARV treatment and prophylaxis
 - To observe an infant-feeding counselling and support session
 - To observe the use of Standard Precautions in the labour and delivery setting
 - To discuss PMTCT programme monitoring
 - To gather information on linkages and follow-up of patients to treatment, care, and support services

Field Visit Interview Guide

Antenatal care (ANC)

- How many ANC patients come here per month?
- How many new ANC patients come here per month?
- What is the typical flow of activities during a woman's first visit to ANC?
- Whom does she see?
- What activities occur?
- Where does she go?

HIV counselling and testing

Are patients routinely offered HIV testing? Is a provider-initiated approach used?

Which of the following pre-testing services are provided?

- Group education
- Couples pre-test counselling
- Ongoing HIV counselling for women who refuse testing

What is the HIV testing process?

- Type of test
- Testing algorithm
- Where tests are performed
- Staff who perform testing
- Average number of tests per week
- Procedures for providing HIV test results

ARV prophylaxis and treatment for PMTCT

- Which regimens are provided?
- What are the main counselling messages and recommendations about ARV treatment/prophylaxis for PMTCT?
- What is the process for providing ARVs to the women who are HIV-infected and their infants?

Labour, delivery, and postpartum care

- How many babies are delivered per month?
- Approximately what percentage of women delivers at the facility?
- Approximately what percent of women who deliver here know their HIV status?
- How do staff identify the HIV status of a mother in labour?
- How do staff identify HIV-exposed infants?
- Approximately what percentage of women delivers at home?
- If a baby is delivered at home, after how many days is it brought to the facility for BCG and OPV?
- What is the role of clinic staff in relation to home deliveries?
- What are the systems for setting up a clinic visit soon after a home delivery?

Infant feeding

- What are the main infant-feeding messages provided?
- When is infant-feeding counselling provided?
- How is support for women's infant-feeding choices provided?

Stigma and discrimination related to MTCT

- What are the systems or steps used to ensure confidentiality?
- What are the systems or steps used to reduce stigma and discrimination in the facility?
- What are common experiences and concerns about stigma and discrimination discussed by patients?

Linkages to clinical care and social support for mothers and families

What are the linkages to other programmes or community organisations providing the following services?

- ANC testing results to labour and delivery ward or home delivery setting
- Labour and delivery ward to postpartum clinic
- Home delivery to postpartum clinic
- Home-based care
- Psychosocial services to persons living with HIV/AIDS
- Family planning
- ARV therapy
- Infant-feeding support
- HIV counselling and testing
- What are the systems used to provide follow-up referrals?

Safety and supportive care in the work environment

- How do counsellors receive emotional support, share experiences and alleviate burn out?
- How would you describe staff attitudes toward the PMTCT programme, job satisfaction, support and workload?
- How would you describe the adequacy of supplies and equipment to follow infection control procedures?

PMTCT programme monitoring

- What is the PMTCT data collection and reporting process?
- Can you show me the tools you use to record PMTCT services you provide?
- What are the measures used to ensure high-quality information is collected and reported?
- Can you tell me how information collected in the PMTCT programme is used to improve the programme?

UNIT 2 Clinical Practicum

I. Overview of Clinical Practicum

Clinical Practicum Goals and Objectives

The overall goal of the clinical practicum sessions is to assist participants to develop communication and critical thinking skills needed for the delivery of services for the prevention of mother-to-child transmission of HIV.

Main Activities

Participants will observe and practise conducting:

- A group HIV pre-test information session
- HIV pre-test counselling
- HIV post-test counselling
- Rapid HIV antibody testing
- Infant-feeding counselling

Optional Activities

If possible, participants will also:

- Observe and practise the use of safer obstetric practices in the labour and delivery setting
- Visit an HIV care and treatment clinic (CTC) in order to understand how the referral system between ANC and a CTC works
- Observe a postpartum visit for an HIV-positive client

Main Clinical Practicum Activities

Daily preparation

- Module trainer reviews objectives of the day with participants
- Module trainer provides guidance on how to conduct clinical practicum
- Module trainer makes group assignments

This is conducted with all participants together as a class, led by the module trainers. This should be done at the workshop venue if possible.

Conducting clinical practicum

- Participants observe facility healthcare workers in their clinical practicum
- Participants practise skills as appropriate
- As an optional activity trainers may organise question and answer sessions with health facility staff

During clinical practicum participants work in small groups of 4-5 each with 1 trainer and health facility staff member in a ward or clinic.

Reflection on clinical practicum (debriefing)

- At the end of the day participants discuss their experiences

- Module trainers give feedback to participants based on observation

The daily debriefing is conducted with all participants together as a class led by 1 trainer. This should be done at the workshop venue if possible.

Roles and Responsibilities

Course Director (Person organizing the PMTCT course)

- Selects clinical practicum locations
- Works with healthcare facility staff to set clinical practicum agenda and arrange terms of clinical practicum
- Makes logistical arrangements for the clinical practicum (transportation, meals, accommodations, etc.)

Course Trainers

- Trainers for the modules related to that day's clinical practicum will prepare participants for clinical practicum session.
- These trainers will also assure that participants have the relevant course materials needed for the day's practicum.
- Module trainers will supervise participants to make sure that they are meeting objectives for the day.
- Other course trainers will assist module trainers with supervising participants during clinical practicum.

Daily Training Coordinator

- Manages communication with healthcare facility staff during clinical practicum
- Keeps trainers and participants on schedule, making adjustments to the daily schedule as needed

Roles and Responsibilities

Participants

- Respect all rules of the health facility
- Observe and perform clinical practicum as required

All course participants should take part in the clinical practicum regardless of clinical background.

Glossary

Abstinence	Deliberate avoidance of sexual behaviour
Acquired immunodeficiency syndrome	<p>A: Acquired – not inherited I: Immuno – because it attacks the immune system D: Deficiency – of certain white blood cells in the immune system S: Syndrome – meaning a group of symptoms or illnesses that occur as a result of the HIV infection</p> <p>AIDS is the most advanced stage of HIV infection.</p>
AIDS	See Acquired Immunodeficiency Syndrome
Anaemia	A condition in which the number of red blood cells (RBCs), the amount of haemoglobin or the total volume of red blood cells is decreased in the blood. Red blood cells and haemoglobin are responsible for carrying oxygen to cells throughout the body.
ANC	See Antenatal Care
Antenatal care	Care of a pregnant woman and her unborn child or foetus before delivery
Antibiotic	A medicine that kills infection-causing organisms
Antibody	A specialised protein found in the blood produced by the immune system in response to exposure to a foreign protein or antigen
Antigen	A substance that can trigger an immune response causing the production of antibodies as part of the body's defence against infection and disease
Antiretroviral prophylaxis	Short-term use of antiretroviral drugs to reduce HIV transmission from mother to infant
Antiretroviral treatment	Long-term use of antiretroviral drugs to treat maternal HIV/AIDS and prevent PMTCT
Artificial rupture of membranes	Technique used to accelerate the delivery process by manually breaking the amniotic membrane
Asymptomatic	Without symptoms of illness or disease
Baby-Friendly Hospital Initiative	A WHO and UNICEF initiative that aims to give every baby the best start in life by creating a healthcare environment that support breastfeeding, thus helping to reduce the levels of infant morbidity and mortality in each country
Bacille Calmette-Guérin	Bacille Calmette-Guérin—a tuberculosis vaccine

Barrier methods	Prevent semen and other bodily fluids from passing from one partner to another. Barrier methods also reduce the risk of STIs; however, they also act as a contraceptive. Such barrier methods include the male and female condom.
BCG	See Bacille Calmette-Guérin
BFHI	See Baby-Friendly Hospital Initiative
Bloodborne pathogens	Microorganisms, such as viruses or bacteria, that are carried in blood and can cause disease
Breast milk substitute	Any food being represented as a partial or total replacement for breast milk, including commercial infant formula and home-modified animal milk
Burnout	A psychological syndrome characterized by overwhelming exhaustion, feelings of cynicism and detachment from the job, and a sense of ineffectiveness
CD4 cells	T-lymphocyte cells in the immune system involved in protection against infections. HIV infects and kills CD4 T-cells.
CD4 count	The number of CD4 cells in the blood and reflects the state of the immune system. The normal count in a healthy adult is between 600 and 1,200 cells/mm ³ .
Cessation of breastfeeding	Completely stopping breastfeeding, including suckling
Chorioamnionitis	Inflammation of the membranes surrounding the foetus
Chronic illness	Any persistent medical condition that can be managed, but not cured with treatment
Combination ARV therapy	Use of three or more antiretroviral drugs together to fight HIV disease and suppress viral load
Commercial infant formula	substitute formulated industrially according to specific standards to satisfy the nutritional requirements of infants during the first months of life up to the introduction of complementary foods
Commercial sex worker	A woman or man who offers sexual intercourse for a fee. The terms prostitute or prostitution are used more frequently used outside of healthcare
Complementary feeding	Any food, whether manufactured or locally prepared, suitable as a complement to breast milk or to infant formula, when either becomes insufficient to satisfy the nutritional requirements of the infant. Such food is commonly called "weaning food" or "breast milk supplement."
Community Outreach	Formal attempt to increase public awareness and support for a healthcare program or change knowledge and behaviour

Condom	Latex rubber or polyurethane device worn during sexual intercourse that provides protection against pregnancy and STIs. Available as both male condom and female condom.
Cotrimoxazole preventive therapy	Also known as trimethoprim/sulfamethoxazole (TMP-SMX) Bactrim®, or Septra®. A combination antibiotic drug effective at preventing and treating Pneumocystis pneumonia (PCP); also serves as a prophylaxis against toxoplasmosis and malaria and active against bacterial infections
Counselling	The confidential dialogue between individuals and a healthcare worker
CPT	See Cotrimoxazole Preventive Therapy
CSW	See Commercial Sex Worker
Cup feeding	Being fed from or drinking from an open cup
Dehydration	Loss of fluid from body tissues
Diarrhoea	Frequent loose and watery bowel movements often caused by viruses, bacteria, or parasites
Disclosure	Verbally revealing one's HIV-positive status
Discrimination	The treatment of an individual or group with partiality or prejudice
Dual protection	The use of one or more methods of contraception that prevent STIs, including HIV, and unintended pregnancy
ELISA	See Enzyme Linked Immunosorbent Assay
Enzyme	A protein that helps promote biochemical reactions
Enzyme Linked Immunosorbent Assay	A laboratory assay (test) to identify the presence of HIV antibodies in body fluids
Epidemic	The occurrence of disease within a specific geographical area or population that is in excess of what is normally expected
Evaluation	A measurement of the change(s) in a situation resulting from an intervention
Exclusive breastfeeding	Feeding an infant only breast milk and no other liquids or solids, with the exception of drops or syrups consisting of vitamins, mineral supplements, or medicines
Failure to thrive	Weight loss or gradual but steady deterioration in weight gain from the expected growth, as indicated in a child's growth card
Family planning	The ability of individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births. Family planning is achieved using contraceptive methods

and treating involuntary infertility.

Female condom	A strong, soft, transparent polyurethane sheath inserted in the vagina before sexual intercourse that provides protection against both pregnancy and STIs. The female condom has no known side effects or risks.
FP	See Family Planning
FTT	See Failure to Thrive
Fungus	A germ that can cause infection, including a yeast infection such as thrush
Germs	Organisms, including bacteria, viruses, and fungi, that can cause infection
HAART	See Highly Active Antiretroviral Therapy
Haematologic	Relating to blood
Haemoglobin	A protein found in red blood cells that uses Iron to carry oxygen from the lungs to other cells in the body. It is a laboratory measurement of anaemia.
HCW	See Healthcare Worker
Healthcare worker	A doctor, nurse, midwife, programme manager, social worker or other professional whose activities include working directly with patients or clients in a healthcare setting
Hepatic	Relating to the liver
Hepatitis	Inflammation of the liver that may be caused by bacterial or viral infection, parasitic infestation, alcohol, drugs, including ARV drugs, toxins, or transfusion of incompatible blood
Hepatomegaly	Swollen or enlarged liver
Herpes Simplex Virus	A virus that causes sores in the mouth, on the genitals, or elsewhere on the body
Highly Active Antiretroviral Therapy	Using at least three ARV drugs in combination to suppress viral replication and progression of HIV disease by reducing the viral load to undetectable levels which can prevent the progression to advanced HIV/AIDS
HIV	Stands for human immunodeficiency virus. See Human Immunodeficiency Virus
HIV Counselling	A confidential dialogue between individuals and healthcare workers to help clients examine their risk of acquiring or transmitting HIV infection
HIV rapid test	A simple test for detecting HIV antibodies in blood or other body

	fluids that produces results in less than 30 minutes
HIV testing	A process that determines whether a person is infected with HIV
Home-based care	The provision of treatment and care in the home
HSV	See Herpes Simplex Virus
Human immuno-deficiency virus	The virus that causes AIDS
IEC	See Information Education and Communication
IMCI	See Integrated Management of Childhood Illness
Immune system	A collection of cells and proteins that works to protect the body from invasion by foreign bacteria, viruses, and fungi
Immunisation	The process by which a person becomes protected against a disease. This term is often used interchangeably with vaccination or inoculation. Currently there is no immunisation to protect against HIV; there is research being done to develop them.
Immuno-compromised	Having a weak or damaged immune system as measured by a low CD4 count. Also, see Immunosuppressed.
Immunosuppressed	When the body's immune function is damaged and incapable of performing its normal functions
Implementation	The phase of the programme cycle where specific steps are taken to reach a specific goal, such as the implementation of ARV prophylaxis to reduce PMTCT
In utero	Events that occur in the uterus (womb) during pregnancy
Incidence	Number of people newly infected with HIV over a set period of years
Indicators	Measurements used to describe a situation. Provides information on status of activities related to each step of the PMTCT programme cycle
Infant who is HIV-exposed	Infant born to a mother infected with HIV, and exposed to HIV through pregnancy, in childbirth, or during breastfeeding
Infection	Invasion and growth of germs in the body
Information, Education and Communication	An approach to HIV/AIDS response that attempts to change or reinforce a set of behaviours in order to foster positive health practices individually and institutionally and can contribute to sustainable change toward healthy behaviour
Integrated Management of Childhood Illness	An integrated approach to child health focusing on the well-being of the whole child. IMCI aims to reduce death, illness, and disability, and to promote improved growth and development among children under 5 years of age. IMCI includes both prevention and treatment implemented by families and communities as well as by health

	facilities.
Insecticide-Treated Bednet (ITN)	A bednet that has been treated with insecticide to protect against mosquitoes and malaria. ITNs have been shown to reduce morbidity and mortality from malaria
Intermittent Presumptive Treatment for Malaria	Antimalarial drug given during pregnancy at predefined intervals to treat malaria
International Organization for Standardization	ISO 9001 is a family of ISO (the International Organization for Standardization) standards for quality management systems. It helps both product and service oriented organizations achieve standards of quality that are recognized and respected throughout the world.
Intervention	An action or strategy to address a particular problem or issue that aims to accomplish a specific result
Intrapartum	Occurring during labour and delivery (childbirth)
IPT	See Intermittent Presumptive Treatment for Malaria
ISO 9001	See International Organization for Standardization
ITN	See Insecticide-Treated Bednet
Low Birth Weight	A newborn is considered to be of a low birth weight if it weighs less than 2500 grams.
Lymphadenopathy	A swelling of the lymph glands in the body. The most common areas of swelling with HIV infection are the neck, under the arms, and in the groin.
Lymphocyte	A type of white blood cell responsible for immune responses
Malaria	An infectious disease caused by a parasite transmitted by a host mosquito that is characterized by cycles of chills, fever, and sweating
Male condom	A latex sheath that is worn over the penis during sexual behaviour in order to prevent pregnancy or spread of sexually transmitted disease
Mastitis	An inflammation of the breast resulting from inadequate or poor drainage of breast milk. Mastitis can be infective or non-infective in origin.
Medication adherence	Taking medicine exactly as recommended by a healthcare provider at the correct time, dosage, and according to food restrictions
Mixed Feeding	Feeding an infant both breast milk and other liquids (such as water, tea, formula, cow's milk) or foods (such as porridge or rice)

Monitoring	Routine tracking of information or indicators about a programme and its intended outputs through record keeping and regular reporting. Involves the asking of questions and observing the services and the implementation process
Mother-to-child transmission of HIV	Transmission of HIV from a woman infected with HIV to her child during pregnancy, childbirth, and breastfeeding. Also referred to as vertical transmission or perinatal transmission
MTCT	See Mother-to-Child Transmission
Nevirapine	A non-nucleoside reverse transcriptase inhibitor (NNRTI) used for treatment of HIV-infected adults. The drug is also effective in preventing HIV transmission from mothers to infants. Trade name: Viramune
NRTI	See Nucleotide/side Reverse Transcriptase Inhibitors
NNRTI	See Non-Nucleoside Reverse Transcriptase Inhibitors
Non-nucleoside reverse transcriptase inhibitors	A type of ARV drug used to treat HIV infection and prevent mother-to-child transmission of the virus. The most commonly known NNRTI is nevirapine (NVP). The class of medications works by blocking the ability of HIV to infect new cells by attaching to an enzyme that the HIV virus uses to replicate. Once the enzyme and medication are bound, the virus can no longer reproduce.
Nucleotide/side reverse transcriptase inhibitors	A type of ARV drug used to treat HIV infection and prevent mother-to-child transmission of the virus. The most common NRTI is zidovudine (ZDV or AZT). Like NNRTIs, the medication works by blocking the ability of HIV to infect new cells.
Oesophagitis	An infection or inflammation of the oesophagus
OI	See Opportunistic Infection
Opportunistic infection	A disease caused by a microorganism that does not normally cause illness in a person with a healthy immune system, but that may cause serious disease when the immune system is weakened
OPV	See Oral Polio vaccine
Oral polio vaccine	A live attenuated vaccine that protects people against polio. It is given as a liquid to be swallowed.
Oral thrush	A fungal infection of the mouth, usually caused by Candida, presents as white patches in the oral cavity
Pandemic	An epidemic occurring over a very large area
PCP	See Pneumocystis Pneumonia
PCR	See Polymerase Chain Reaction
PEP	See Post-Exposure Prophylaxis

Perinatal transmission	See Mother-to-Child Transmission of HIV
PGL	Persistent Generalised Lymphadenopathy
Persistent generalised lymphadenopathy	A condition of benign enlargement of the lymph nodes that are chronically swollen in at least two areas of the body for 3 months or more with no obvious cause other than HIV infection
Platelet	A type of blood cell (thrombocyte) that promotes blood clotting. Also see Thrombocytopenia
PMTCT-Plus	Comprehensive HIV/AIDS care and treatment services, including ARV treatment, to eligible HIV-infected mothers, their children, and their families
Pneumocystis Pneumonia	A severe, life-threatening AIDS-defining lung infection caused by <i>Pneumocystis jirovecii</i> that leads to fever, dry cough, and difficulty breathing. The disease, formerly known as <i>Pneumocystis carinii</i> pneumonia (PCP) is a major cause of illness and death in HIV-infected persons. The acronym PCP is still in use.
Polymerase Chain Reaction	A viral assay or test that detects the presence or the amount of a virus in the blood. For the HIV virus, the DNA-PCR test indicates the presence of the virus. The HIV RNA-PCR measures the amount of virus, often referred to as the viral load.
Post-exposure prophylaxis	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
Postpartum care	Care for a mother and infant following birth
Premature delivery	A delivery that occurs after 28 weeks but before 37 weeks gestation
Prenatal care	See Antenatal Care
Prevalence	The number of people with a disease or infection at any given time or over a set period of years
Programme cycle	Process of assessing a situation and then planning, implementing, monitoring, and evaluating a responsive public health programme
Prophylaxis	Treatment to prevent the onset of a particular disease
Psychosocial Support	Support involving social and psychological aspects
Replacement feeding	Feeding a child who is not receiving any breast milk with a diet that provides all the nutrients the child needs. During the first 6 months, this should be with a suitable breast milk substitute--commercial formula, or home-prepared formula with micronutrient supplements.
Replicate	To duplicate or make more copies of something. Once the HIV virus

	has entered the host cell, it will replicate to produce a greater viral load.
Safe Motherhood Initiative	Launched in 1987 by international agencies and governments to raise global awareness about the impact of maternal mortality and morbidity, and to suggest potential solutions. The Initiative's goal is to reduce maternal mortality worldwide.
Safer sex	Ways to have sex that reduce the risk of acquiring or transmitting HIV and other STIs such as use of a latex condom or other barrier methods
Seroconversion	When a person recently infected with HIV develops antibodies that can be measured using a laboratory test
Seropositive	A blood test result that indicates infection. A test can indicate the presence of antibodies to an organism (antibody positive) or the presence of the organism and its proteins (antigen positive)
Sexually Transmitted Infection	Infections that people get by having intimate sexual contact, including having sex (vaginal, oral, or anal intercourse) with someone who is infected. There are many different kinds of STIs including herpes, HIV, and syphilis.
Side effect	Unintended action or effect of a medication or treatment
Splenomegaly	Inflamed or enlarged spleen that is assessed by a physical exam
Standard Precautions	A simple set of effective practices designed to protect healthcare workers and clients from infection with a range of pathogens including bloodborne viruses. These practices are used when caring for all clients, regardless of diagnosis.
Stereotype	Simplified image of an individual or group based on a pattern or trend
Sterilisation	Completely eliminating or killing all microorganisms by application of steam under pressure, dry heat, or ethylene oxide and other gases, or by soaking in other liquid chemicals for prolonged periods
STI	See Sexually Transmitted Infection
Stigma	Unfavourable attitudes and beliefs directed toward people or a group of people
Symptomatic	Showing signs of illness or disease
TB	See Tuberculosis
Thrombocytopenia	An abnormally low number of platelets (thrombocytes) due to disease, reaction to a drug, or toxic reaction to chemotherapy treatments. If the platelets are too few, bleeding can occur.
Thrush	See Oral Thrush

Tuberculosis	A contagious bacterial infection that damages the lungs and other parts of the body. TB is a respiratory illness and is mainly spread through coughing. The most common and serious HIV-related disease
Unprotected sex	The exchange of blood, semen, and/or vaginal fluids that occurs during sexual activity when condoms and other barrier methods are not in use; can refer to oral, anal, or vaginal sex
Vertical transmission	See Mother-to-Child Transmission of HIV
Viral load	The amount of HIV in the blood that can be measured by HIV ribonucleic acid polymerase chain reaction (HIV-RNA PCR). The test is used as a marker of response to antiretroviral (ARV) treatment.
Viral resistance	Changes in the genetic makeup of virus that decreases the effectiveness of antiretroviral drugs
Virus	A type of germ that causes infection
Wasting (syndrome)	Condition characterised by loss of more than 10% of body weight and either unexplained chronic diarrhoea (lasting more than 1 month) or chronic weakness and unexplained, prolonged fever (lasting more than 1 month)
Western blot	A laboratory test for specific antibodies to confirm repeatedly reactive results on the HIV ELISA test. Western blot is the validation test used often for confirmation of other test results.
Window period	The period of time between when a person is infected with HIV and when an antibody test result is positive. The window period usually lasts for 4 to 6 weeks but occasionally up to 3 months after HIV exposure.
ZDV	See Zidovudine
Zidovudine	A nucleotide/side reverse transcriptase inhibitor (NRTI) used for treatment of HIV-infected adults. The drug is also effective in preventing HIV transmission from mothers to infants; trade name: Retrovir. Also known as azidothymidine (AZT)

FREQUENTLY ASKED QUESTIONS (FAQs)

This section reviews questions that are often asked about HIV and related topic areas. It is intended to be used as a resource for healthcare workers who provide counselling and education for patients. It can also be handed out as a general information sheet or used as a guide for group pre-test sessions about HIV.

What is HIV?

The Human Immunodeficiency Virus (HIV) is a virus that attacks the body's immune system. Over time, the virus multiplies and weakens the body's immune system by destroying white blood cells (CD4+ cells). This process makes the body weak and unable to fight infection.

How does HIV make someone sick?

With a weakened immune system, the body cannot protect itself from germs in the environment. Common germs can cause serious infections in people with HIV/AIDS. These infections are collectively known as opportunistic infections (OIs). After a person who is HIV-infected has an opportunistic infection, he or she is said to have AIDS. Medical intervention and ARV treatment are necessary to help support the weakened immune system of a person with HIV/AIDS.

What is the difference between HIV and AIDS?

AIDS is the most advanced stage of HIV-infection. A person is said to have AIDS when they develop an opportunistic infection that indicates that the immune system is too weak to fight off infection. Opportunistic infections which are sometimes referred to as AIDS-defining illnesses include candidiasis, PCP pneumonia, tuberculosis and certain cancers like Kaposi's sarcoma. A person has AIDS when the virus has done enough damage to the immune system to allow infections and cancers to develop.

Where did HIV come from?

Scientists have different theories about the origins of HIV, but none have been proven. We know that the virus has existed in the United States, Haiti and Africa since the late 1970's. At the beginning of the epidemic, healthcare workers noticed rare forms of pneumonia, cancer and other illnesses that were not normally found in healthy people. These findings prompted the first research into the virus that has become known as HIV.

How is HIV transmitted?

HIV is found in the blood, semen, vaginal secretions, and breastmilk of an infected person. HIV can be transmitted by having unprotected vaginal, anal or oral sex. Sharing needles or syringes with a person with HIV infection can also transmit the virus. An HIV-infected mother can also transmit the virus to her infant. **You can protect yourself by abstaining from high-risk activities, such as unprotected sex or sharing needles for injection drug use, that may result in contact with another person's body fluids.**

What are the signs and symptoms of HIV?

Following infection with the HIV virus, a person may develop flu-like symptoms such as fever, headache, fatigue and enlarged lymph nodes. This is known as Acute Retroviral Syndrome (ARS) and it usually goes away in 1-2 weeks. Often a person infected with HIV

will not show or feel symptoms for years. During the later stages of HIV infection, a person can be very sick. People develop signs and symptoms of their HIV infection before they develop what has been defined as AIDS. AIDS is the final and most severe phase of HIV infection and leads to death if left untreated.

How can I tell if I am infected with HIV?

The only way to know if you are infected with HIV is to have your blood tested. You cannot rely on symptoms to know whether or not you are infected with HIV. Many people who are infected do not show or feel any symptoms of their disease for years.

If you think you have symptoms of HIV, go to a healthcare provider immediately. If you think you were exposed to the HIV virus, go to a healthcare provider immediately.

Can a woman give HIV to a man during vaginal intercourse?

Yes. If the woman is infected, HIV is present in vaginal and cervical secretions (the wetness in a woman's vagina) and can enter the penis through the urethra (the hole at the tip) or through cuts or abrasions on the skin of the penis. The presence of other STIs can increase the risk of transmission. **The correct use of a latex male or female condom can reduce the risk of transmitting HIV during vaginal intercourse.**

Can I get HIV from oral sex?

We should always remember that exposure to semen, pre-ejaculatory fluid, vaginal secretions, blood, or breastmilk in the case of infants, poses a risk for HIV transmission. The small risk of transmission through oral sex is increased by the presence of sores, poor dental hygiene and/or bleeding gums.

Can I get HIV from kissing?

Casual contact through closed-mouth or "social" kissing is not a risk for transmission of HIV. Forms of kissing with an open mouth may provide a potential for contact with blood. However, the risk of acquiring HIV during open-mouth kissing is believed to be very, very low.

If an HIV test can detect the virus in a person's saliva, then why can't I get HIV through kissing?

While it is possible to find the HIV virus in the saliva of infected people, there is no evidence that the virus is spread by contact with saliva. Saliva has natural properties that limit the virus' infectiousness. The test that looks for HIV in saliva actually looks for HIV-antibodies. The lining of the mouth can however be infected with HIV and it is possible to spread HIV through oral sex.

How long does it take for HIV to cause AIDS?

The time between being infected with HIV and having signs and symptoms related to AIDS is called the asymptomatic period. This time period varies from person to person. It may be as short as 6 months or as long as 10 years or more.

How can I protect myself from contracting HIV?

You can protect yourself from contracting HIV by:

- Being abstinent

A person who does not engage in sexual intercourse and does not inject drugs (or who uses clean, sterile needles/syringes for such injections) has almost no chance of contracting HIV.

- Not having unprotected, oral, anal or vaginal sex

People who use a condom correctly every time they have sex protect themselves from HIV.

- Only have sex with one partner known to be HIV-negative

People who are mutually faithful (i.e., they only have sex with each other) are not at risk of HIV by sexual means.

Should I be concerned about getting infected with HIV while playing sports?

There are no documented cases of HIV infection acquired through participation in sports. Risk of HIV transmission would only occur in sports with direct body contact where bleeding may occur; even in these sports, the risk of transmission is very low. In the event of an injury that causes bleeding, a sports match should be interrupted until the wound stops bleeding, is antiseptically cleaned, and securely bandaged. There is no risk of transmission through sports activities where bleeding does not occur.

Can I get HIV from casual contact, such as shaking hands, hugging, or drinking from the same glass as an HIV-infected person? What about using a public toilet? What about if someone with HIV coughs or sneezes near me?

No. HIV is not transmitted by day-to-day contact in the home, workplace, school, or in social settings. HIV cannot be transmitted through shaking hands, hugging, or by social kissing. You cannot become infected from a toilet seat, drinking fountain, doorknob, dishes, drinking glasses, food, or pets. HIV is a fragile virus that cannot survive outside of the human body. HIV cannot be carried in the air by a cough or sneeze or in food.

Can I get infected with HIV from a mosquito bite?

No. Studies have shown no evidence of HIV transmission through insects, even in areas with high HIV prevalence and large populations of biting or bloodsucking insects such as mosquitoes. There has always been concern about transmission of the virus by insects, but the lack of outbreaks related to exposure to mosquitoes supports the conclusion that HIV cannot be transmitted by mosquitoes. If mosquitoes were responsible for spreading HIV, then people of all ages would be infected and this is not the case. HIV lives in cells of the human body but, unlike malaria, does not live in the cells of insects. Mosquitoes and other insects are not suitable homes (or hosts) for HIV.

Is there a risk of HIV transmission when having body piercing or visiting the barber?

Transmission of infectious diseases can only occur if instruments contaminated with blood are not sterilised in between uses. There are no documented cases of HIV transmission from piercing or tattooing, but the risk of Hepatitis B and C is considerable. Those who carry out body piercing should follow Standard Precautions, such as cleaning and sterilising all instruments. When visiting the barber, there is no risk of infection unless the skin is cut and

infected blood gets in a wound. Using disposable razors is recommended because not all barbers sterilise their razors.

Can the HIV virus survive outside of the body, and if so, for how long?

HIV is unable to reproduce or survive well outside of the human body. The virus dies once the body fluids dry up.

Scientists agree that HIV does not survive well in the environment, making the possibility of environmental transmission remote. HIV is found in varying amounts in blood, semen, vaginal fluid, breastmilk, saliva, and tears. To obtain data on the survival of HIV, scientists have had to use artificially high concentrations of laboratory-grown virus. Although HIV in these unnaturally high concentrations can be kept alive under precisely controlled laboratory conditions, CDC studies have shown that even in these high concentrations of HIV, drying of the medium containing the virus reduces the number of infectious viruses by 90–99 percent in several hours.

HIV is very fragile, and many common substances, including hot water, soap, bleach, and alcohol, will kill it. HIV is also sensitive to fluctuations in temperature and the presence of oxygen. One place that HIV has been known to survive is in syringes used to inject drugs, since these are airtight and often contain blood from the person on whom the syringe was previously used.¹

What is the connection between HIV and other sexually transmitted infections (STIs)?

Having a sexually transmitted infection (STI) can increase a person's risk of becoming infected with HIV. The chance is increased because, typically, STIs cause sores or breaks in the skin or mucous membranes of the vagina. These openings make it easier for HIV to enter the body during sexual contact. STIs can cause microscopic breaks in the skin that are not visible. When a body's immune system is fighting an STI it can not fight HIV and this can lead to an increase in a person's HIV viral load which can also increase their infectiousness. It is very important to ask all patients about their risk for STIs and to test and treat aggressively.

How effective are latex condoms in preventing HIV?

Several studies have demonstrated that latex condoms are highly effective in preventing HIV transmission when used correctly and consistently. The studies examined uninfected people involved in sexual relationships with HIV-infected persons and found that even with repeated sexual contact, 98-100% of those people who consistently used latex condoms remained uninfected.

Can oil be used as a lubricant with condoms?

Most condoms are made from a rubber known as latex, which is chemically reactive with oil- and petroleum-based substances. Many types of oils or lubricants can cause latex condoms to break or tear during sex, which makes them useless in preventing HIV and other STIs. Oils that are not designed specifically for use with latex condoms should never be used as a lubricant during oral, anal or vaginal sex.

How can I tell if I'm infected with HIV?

¹ Adapted from <http://hivinsite.org/insite?page=ask-01-10-20>.

Many people who are infected do not know they are infected since people with HIV infection can remain without symptoms for many years. The only way to know if you are infected is to be tested. You cannot rely on symptoms to know whether or not you are infected with HIV.

**How long after a possible exposure to HIV should I get tested?
When do you know for sure that you are not infected with HIV?**

HIV tests used in Tanzania look for antibodies produced by the body to fight HIV. Most people will develop detectable antibodies within 3 months of infection; on average a person will develop antibodies within 3-6 weeks of infection. The period between exposure to the time the antibodies are detectable is called the “window period.” During this time, the HIV test may not give an accurate result. It is very important to note that HIV can still be transmitted to another person during the “window period”, even if the antibodies are not detectable by testing. Until you have been tested for HIV 3 months or more after possible exposure, you cannot be certain about your status. It is very important to protect yourself and others from further exposure to HIV during the window period, and beyond, to stay free of infection.

How do I know that my HIV test is accurate?

HIV tests are extremely accurate. Tanzania’s guidelines require that one HIV-positive test result be confirmed by at least one other HIV test before the final test result is delivered. If you think you might have an inaccurate positive result (“false positive”) you can return to a counselling and testing site for another HIV test in 6 weeks. You must avoid possible exposure to the virus during this time.

If you are concerned about an inaccurate negative test result (“false negative”) due to recent exposure to HIV, you should retest 3 months after the last possible exposure. This will allow time for antibodies to develop, so that the test can detect HIV infection if it is present.

If I test negative for HIV does that mean that my partner is also negative?

No. Your negative test result does not tell you anything about the HIV status of your partner(s). HIV is not necessarily transmitted every time there is an exposure, although it can be transmitted with any exposure. No one’s test result can be used to determine another person’s HIV status. Every person must have the HIV test performed on their own blood.

What if I test positive for HIV?

A positive test result indicates that you are infected with HIV. The sooner you take steps to protect your health, the better. Early medical treatment, a healthy lifestyle and a hopeful attitude can help you stay well. Prompt medical care can prevent serious illness and delay the onset of symptoms. If you receive a positive test result, there are a number of important steps you should take immediately to protect your health:

- See a healthcare provider, even if you do not feel sick. Try to find a healthcare provider who has experience treating HIV. There are important tests, immunisations and drug treatments that can help you maintain good health. It is never too early to start thinking about treatment possibilities.
- Have a tuberculosis (TB) test. You may be infected with TB and not know it. Undetected TB can cause serious illness for persons with HIV. If detected early, TB can be treated successfully.
- Stop using recreational drugs, alcoholic beverages and smoking. These substances can weaken your immune system.

- Consider joining a support group for people with HIV infection or finding out about other resources available in your area.
- Avoid unprotected sexual intercourse as this can lead to re-infection with a different strain of HIV, which can cause the disease to progress faster.
- Learn as much as you can about HIV infection and ways to take care of yourself. Simple, daily practices can help you keep your health for many years, even with HIV infection. Local and/or national resources are available to provide more information for you (see *Module 7 Appendix 7-X, Handout on National HIV/AIDS Support Networks*).

What is the treatment for HIV and AIDS?

There is no cure for HIV infection but there are medicines that slow down the spread of HIV and preserve the body's immune system. These medicines, called antiretrovirals (ARVs) can be very effective if taken daily. ARVs reduce the amount of HIV in the body. Less virus means more functioning CD4 cells; this enables the body to fight off infection. When on ARV treatment, a patient will begin to regain weight and his or her appetite. Many patients report an increase in their energy level after starting ARV treatment; many even return to work.

How do I take antiretroviral drugs (ARVs)?

It is very important that you take the medicine exactly as prescribed. ARVs only work when the amount of medicine circulating in the body is at a certain level. For this to happen, you must take each medicine:

- a) **At the correct dose.** If you take less than the dose prescribed the treatment will not be effective.
- b) **At the right time of the day.** Most ARV drugs are taken twice a day. This means you will take your medicines every 12 hours, for example at 7:00 (7 AM) and again at 19:00 (7 PM), according to the schedule of daily activities.
- c) **According to any dietary restrictions.** Some ARV medicines need to be taken with food, others need to be taken on an empty stomach.

What is viral resistance?

Viral resistance occurs when a virus mutates and is no longer vulnerable to a particular antiretroviral (ARV) drug. Viral resistance usually occurs when patients do not take doses as they are prescribed. Sometimes, patients on ARV treatment skip doses due to side effects or the difficulty of taking medications every day. Viral resistance to TB medications has resulted in what is commonly known as MDR-TB or multidrug-resistant TB.

Viral resistance can also occur on some ARV prophylaxis regimens. A single dose of NVP given to pregnant women during labour can cause resistance to NVP, if the medication is later used in her ARV treatment. However, the resistance has been shown to decrease over time. The implications of NVP resistance for PMTCT programmes remain an important topic and will continue to evolve as more research is done.

How do people get tuberculosis?

Tuberculosis (TB) is a disease spread from person to person through droplets in the air, by coughing, sneezing and close contact. People with HIV infection are more likely to develop active TB disease than people not infected with HIV. HIV/TB co-infection is very dangerous; worldwide, TB is the leading cause of death among HIV-infected people.

HIV-infected persons who become infected with TB should be encouraged to seek medical care and take all of the medications prescribed for them to combat both TB and HIV. Close clinical monitoring is necessary to avoid potential interactions between TB medication and ARV treatment.

How does co-infection with malaria in pregnancy affect an HIV-infected woman?

An HIV-infected pregnant woman with malaria is more likely to develop severe malarial illness, including anaemia and infection of the placenta. Infants born to women with HIV and malaria have an increased risk of low birth weight and a higher chance of illness and death as a result.

Pregnant women with HIV infection are more susceptible to treatment failure of antimalarial drugs. Preventive treatment is recommended for women at risk of malaria, and includes the use of insecticide-treated netting (ITN) and daily cotrimoxazole prophylaxis or treatment with at least two doses of sulfadoxine-pyrimethamine (SP), the first at 20-24 weeks and the second at 28-32 weeks.

Can women with HIV have babies?

Women who are infected with HIV are able to have normal, healthy pregnancies. It is very important that HIV-infected pregnant women have the best antenatal care available to decrease the risk of transmitting the virus to their infants. An HIV-infected mother will want someone who has experience with safer delivery practices to deliver her baby. It is also critical that the baby and mother continue to receive care in the postpartum period and ongoing follow-up care. Unless virologic HIV testing is available, a definite diagnosis of HIV in the child cannot be made until the baby is 18 months old. However, there are specific symptoms and conditions that can signal to a healthcare worker that a baby is at increased risk of being HIV-infected. This is why it is so important that an HIV-infected mother bring her baby for regular clinic visits.

Can HIV-infected women use hormonal contraceptives such as oral birth control pills?

Hormonal contraceptives, such as birth control pills, can be taken by HIV-infected women but they do not provide protection against STIs or re-infection with HIV. Oral contraceptives should be used in combination with a barrier method, such as a condom.

If a woman is on ARV treatment, she may have less than optimal protection from hormonal contraceptives since certain classes of ARVs, including the drug nevirapine (NVP), may decrease the effectiveness of hormonal contraception. Women who are HIV-infected should discuss with a healthcare worker the possible interactions between hormonal contraceptives and some antibiotics used to prevent and treat opportunistic infections (OIs).

The WHO recommends that there should be *no* restriction on the use of hormonal contraception options for women, other than those already put forth in the current “*WHO Medical Eligibility Criteria for Contraceptive Use*.”

Why is the Ministry of Health and Social Welfare recommending that all pregnant women be tested for HIV?

A woman with HIV infection can pass the virus to her infant during pregnancy, birth, or the breastfeeding period. If a pregnant woman knows that she is infected with HIV, she can take ARV drugs to lower the chance of infecting the infant. HIV counselling and testing provide

an opportunity for all pregnant women to learn their HIV status. If infected, a pregnant woman may gain access to treatment to help delay disease progression and reduce the risk of transmitting HIV to her infant. HIV counselling and testing can also provide uninfected women with prevention information to reduce the possibility of future exposure to HIV.

Is single-dose nevirapine related to viral resistance?

Viral resistance occurs when a virus mutates and is no longer vulnerable to a particular antiretroviral (ARV) medication. Recent studies have shown that a single dose of NVP, given to pregnant women during labour may cause resistance to NVP, if the medication is later included in her ARV treatment. Other studies demonstrated that the resistance to single-dose NVP diminished over the course of a year. The implications of NVP resistance for PMTCT programmes remain an important topic and will continue to evolve as more research is done. The expansion of PMTCT programmes that use single-dose NVP should still be considered the best alternative while improvements are made to the health system and until more complex ARV treatment can be offered.

If a mother is already on treatment, does she still need prophylaxis?

No, ARV treatment lowers the maternal viral load and is effective for PMTCT. The WHO recommends that if a mother is on an effective ARV treatment regimen, she should continue with the same dosing schedule during labour and in the postpartum period. The infant should still receive prophylaxis according to national guidelines.

Some ARV medications, such as efavirenz (EFV) may cause birth defects in the foetus if used in the first trimester of pregnancy. If a woman on ARV treatment becomes pregnant, she should consult with her healthcare provider to make sure her ARV medications are safe to take during pregnancy.

Is it possible that my baby won't be born with HIV?

Yes, it is possible to give birth to a healthy baby if a mother is infected with HIV. Testing and counselling during pregnancy to identify HIV-infected women, safer delivery and infant feeding practices, ARV treatment, and short-term prophylaxis will significantly reduce the chance of transmitting infection by 40-70%.

With no intervention, the chance that an HIV-infected mother will give birth to an HIV-infected baby is 20–45%.

Can a woman pass HIV to her infant through breastmilk?

Yes. It is estimated that for every 100 infants born to HIV-infected mothers, 5 to 20 are infected during breastfeeding (a risk of between 5% and 20%). The risk of transmitting HIV through breastfeeding increases when the mother is ill, has mastitis or other breast conditions. The risk of transmitting HIV also increases if a child has ulcers or sores in the mouth.

However, the risk of not breastfeeding an infant also places them at higher risk for other common diseases of childhood like diarrhoea and respiratory infections. Breastmilk protects infants by stimulating the development of their immune systems. The decision to breastfeed should be made by the mother, but be informed by her family situation and healthcare provider.

How will I decide whether to breastfeed my baby or use replacement feeding?

All mothers who are HIV-infected should seek and receive infant-feeding counselling, which includes general information about the risks and benefits of all infant-feeding options and specific guidance on selecting the option most likely to be suitable for their situations.

Can I breastfeed my child if I am HIV-infected?

The national policy is to encourage exclusive breastfeeding for the first 6 months. Only when replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS), should mothers who are HIV-infected avoid breastfeeding. To minimise HIV transmission risk, mothers who are HIV-positive should discontinue breastfeeding after 6 months or until replacement feeding is AFASS, taking into account local circumstances, the individual woman's situation, and the risks of replacement feeding (which include malnutrition and infections other than HIV).

All mothers who are HIV-positive should seek and receive counselling, which includes general information about the risks and benefits of infant-feeding options and specific guidance on selecting the option most likely to be suitable for their situations.

If breastfeeding transmits HIV infection then why do the national guidelines support exclusive breastfeeding by HIV-infected mothers for the first 6 months of an infant's life?

While it is true that breastfeeding can transmit HIV to an infant, breastmilk also contains many good protective proteins and immune factors that protect the infant against common childhood illnesses like infectious diarrhoea. If a mother has access to replacement feeds that are acceptable, feasible, affordable, sustainable and safe then their use is encouraged. However, nationally most mothers do not have access to replacement feeds that meet these criteria. In addition, the risk of transmitting HIV through breastfeeding is lower than during the labour and delivery setting and can be lowered further by educating women about breast health and safer breastfeeding techniques.

Can I breastfeed if my status is unknown and my child's HIV status is also unknown?

Because of the benefits of breastfeeding, the following are the recommendations for women who do not know their status:

- Breastfeed **exclusively** for the first six (6) months of life.
 - Continue breastfeeding for up to 2 years or longer.
 - After the infant reaches 6 months of age, introduce safe, nutritious complementary foods.
- However, women of unknown HIV status should be encouraged to get tested.

Can I breastfeed if my infant is HIV-infected?

Experts suggest that because the infant already is HIV-infected, the risk of transmitting HIV through breastfeeding no longer exists. In addition, the well-described benefits of breastfeeding become particularly important for the HIV-infected infant, therefore, it is recommended that the child be breastfed.

What is mixed feeding?

Mixed feeding refers to the combination of breastfeeding and formula or other liquids or solid foods in the first six months of life. Studies have shown that exclusive breastfeeding is safer than mixed feeding during this time. The infant's gastrointestinal tract is easily irritated and

mixed feeding can irritate the mucosal lining, making the baby more susceptible to HIV and other infections.

How often and how long should I breastfeed to bring in the milk supply?

Feeding on demand, 8 –10 times per day during the first month will help bring in your milk supply. However, breastfeeding patterns will vary from day to day and infant to infant. Some general advice on ensuring a good milk supply: offer and empty both breasts during each feeding, allowing up to 20-30 minutes for a feed. Alternate which breast you start on. By allowing a baby to nurse as long as he or she wants, a mother can ensure that her baby will receive the most benefit from the high-fat and calorie-rich hind milk. Mothers should be encouraged to rest and nap throughout the day if need be and drink plenty of fluids.

How is fore milk different from hind milk?

At the beginning of a feed, babies receive foremilk. This milk has many nutrients and is low in fat and calories. As the baby continues to feed, the fat content of the breast milk increases. Toward the end of a feed, the baby receives what is called hind milk. Hind milk is high in fat and calories, which are important for energy, organ development, and growth.

Doesn't my baby need extra water?

No, water is never needed. Breastmilk contains 88% free water and provides the perfect balance of water, protein, fat, and vitamins for your baby.

How can I tell if my baby is getting enough breastmilk?

The baby should have 3 to 5 good-sized, soft, yellow-coloured, seedy bowel movements per day and 6 to 8 wet diapers (nappies) per day. However, these numbers are estimates and will depend upon the individual circumstances of the mother and child.

How can I tell if my baby is getting sick?

If you see the following signs, be sure to seek medical assistance as soon as possible:

- Signs of dehydration: fewer than 3 wet diapers (nappies) per day, pink-coloured urine, sunken fontanel (the soft spots on top of a baby's head), sunken eye sockets, or dry mouth
- Baby refuses to breastfeed for more than 8 hours
- Baby does not have bowel movements or has many more than usual
- Baby is highly irritable or contrastingly calm, any drastic change from the baby's normal behaviour
- Rapid breathing with possible chest heaves

Is there any difference in the HIV virus present in blood, compared to the HIV virus in breastmilk?

HIV present in breastmilk is the same strand of virus that would be found in the blood. The concentration of virus in breastmilk is usually smaller than the concentration of virus in the blood. Viral concentration in breastmilk is highly variable and can be affected by many factors, such as time of day, hormone levels, or whether the woman is fighting other infections. Risk of HIV transmission always increases when a woman has a high viral load, whether the virus is in her blood or her breastmilk.

Key National PMTCT Reference Materials

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Key Online Resources on PMTCT in Resource-Constrained Settings

<http://www.cdc.gov/nchstp/od/gap>

CDC's Global AIDS Program (GAP) exists to help prevent HIV infection, improve care and support, and build capacity to address the global HIV/AIDS pandemic. GAP provides financial and technical assistance through partnerships with communities, governments, and national and international entities working in resource-constrained countries.

http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant.htm

The WHO Child and Adolescent Health and Development website provides information about infant and young child nutrition as well as lists key resources in this field.

<http://www.WomenChildrenHIV.org>

Women, Children, and HIV disseminates state-of-the-art clinical information and training resources on mother-to-child transmission of HIV (MTCT) and related topics. It communicates the best practices in PMTCT and care for infected women, children and families in resource-constrained settings.

<http://www.cdc.gov/hiv/dhap.htm>

The **Centers for Disease Control and Prevention (CDC)** website contains information on HIV/AIDS in the United States.

<http://www.fhi.org>

Family Health International (FHI) works to address the needs of communities and countries ravaged by HIV/AIDS. FHI's publications present comprehensive, state-of-the-art information on every aspect of HIV/AIDS prevention and care, treatment, and mitigation by sharing lessons learned from many years of experience with HIV/AIDS in the developing world.

<http://hivinsite.ucsf.edu>

HIV InSite is a global Internet resource for information on HIV/AIDS medicine, prevention, and policy issues. It also contains regional and country-level analyses of key policy issues. HIV InSite is based at the University of California San Francisco.

<http://www.popcouncil.org/hivaids/index.html>

The Population Council's activities include efforts to alleviate the epidemic's effects; elucidate the basic science of infection and the determinants of the epidemic; work toward prevention; promote policy development; reduce stigma and discrimination; and promote the treatment, care, and support of people with HIV.

<http://www.reproline.jhu.edu/video/hiv/tutorials/English/index.htm>

ReproLearn Multimedia tutorials provide doctors, faculty and healthcare trainers with technical information they need to provide high-quality healthcare and to train other healthcare providers about the needs of women with HIV/AIDS.

<http://www.safemotherhood.org>

The Safe Motherhood Initiative is a worldwide effort sponsored by the WHO and partners that aims to reduce the number of deaths and illnesses associated with pregnancy and childbirth.

<http://www.synergyaids.com>

The Synergy Project provides technical assistance and services to the USAID to design, evaluate and coordinate HIV/AIDS programmes and identify and disseminate lessons learned. The website contains a large database of HIV-related documents and a toolkit on HIV programme management.

<http://www.unaids.org>

UNAIDS (Joint United Nations Programme on HIV/AIDS) provides information on epidemiology, treatment and programme development.

http://www.usaid.gov/pop_health/aids

USAID (United States Agency for International Development) is an independent agency of the US federal government that develops community-based advocacy and support programs for people living with HIV/AIDS, and provides support for orphans and vulnerable children whose families have been affected by HIV/AIDS. USAID also supports voluntary testing and counselling centers.

<http://www.who.int/hiv/en>

WHO (World Health Organization) offers information on epidemiology, treatment and programme development for HIV/AIDS.

http://www.worldbank.org/hiv_aids/globalprogram.asp

The World Bank is working with all regions in the developing world that are affected by HIV/AIDS. The AIDS programme offers global learning and knowledge sharing on approaches and best practices for addressing HIV/AIDS.

Module 1: Introduction to HIV/AIDS

Key Related Resources:

National Center for HIV, STD and TB Prevention Divisions of HIV/AIDS Prevention. 2005. *Frequently Asked Questions on HIV and AIDS*. CDC. Available at: <http://www.cdc.gov/hiv/pubs/faqs.htm>

François-Xavier Bagnoud Center at University of Medicine and Dentistry of New Jersey. 2006. *About HIV: A Teaching Tool*. University of Medicine and Dentistry of New Jersey: New Jersey. Available at: http://www.umdnj.edu/xfbweb/downloads/About_HIVEnglishV2.pdf

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AIDS Education and Global Information Systems (AEGIS). 2001. *Opportunistic Infections*. Available at: <http://www.aegis.com/default.asp?req=http://www.aegis.com/topics/oi/>

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CDC. 1994. 1994 Revised Classification System for Human Immunodeficiency Virus Infection in Children Less Than 13 Years of Age *MMWR Recomm Rep* 43(RR-12): 1-10. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00032890.htm>

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Division of Reproductive Health, Kenyan Ministry of Health, National AIDS & STD Control Programme (NAS COP). *Kenya PMTCT National Training Curriculum*. Available at: <http://www.womenchildrenhiv.org/wchiv?page=gtp-02-01>

Ministry of Health and Social Welfare, The United Republic of Tanzania. 2004. *National Guidelines for Prevention of Mother-to-Child Transmission of HIV (PMTCT)*. Dar es Salaam.

Ministry of Health and Social Welfare. *National Multi-Sectoral Strategic Framework on HIV/AIDS 2003-2007*. Dar es Salaam: National AIDS Control Programme (NACP), The United Republic of Tanzania. January 2003. Available at: <http://www.nacptz.org/publications/NMSF%202003-2007.pdf>

National AIDS Commission, Ministry of Health and Social Welfare, United Republic of Tanzania. 2004. *Situation and Response Analysis of the Health Sector on HIV/AIDS Epidemic*. Ministry of Health and Social Welfare.

National AIDS Commission, Ministry of Health and Social Welfare, United Republic of Tanzania. 2003. *National HIV/AIDS Strategic Plan 2003–2007*. Ministry of Health and Social Welfare.

Pantaleo, G, C Graziosi, et al. 1993. New concepts in the immunopathogenesis of human immunodeficiency virus infection. *N Engl J Med* 328(5): 327-35. Available at: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=8093551

Simon V, Ho DD, et al. HIV/AIDS epidemiology, pathogenesis, prevention, and treatment. *Lancet*. 2006 Aug 5;368(9534):489-504. Available at: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16890836&query hl=4&itool=pubmed_docsum

UNAIDS, UNFPA, et al. 2004. *Women and HIV/AIDS: Confronting the Crisis*. UNAIDS, UNFPA, UNIFEM: Geneva, New York. Available at: http://genderandaids.org/downloads/conference/308_filename_women_aids1.pdf

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WHO and CDC. 2005. *Prevention of Mother-to-Child Transmission of HIV Infection Generic Training Package*. Available at: <http://www.womenchildrenhiv.org/wchiv?page=wx-resource&root=&subcat=&rid=784-41902>

Module 2: Overview of HIV Prevention in Mothers, Infants and Young Children

Key Related Resources:

UNAIDS. 2005. *Intensifying HIV prevention*. UNAIDS. Geneva. Available at:
http://data.unaids.org/publications/irc-pub06/jc1165-intensif_hiv-newstyle_en.pdf

Women, Children, and HIV (<http://womenchildrenhiv.org>)
An online library of resources on the prevention and treatment of HIV infection in women and children targeted at health workers, program managers, and policy makers in resource-poor settings.

WHO, 2006. *Decision-Making Tool for Family Planning Patients and Providers*. Available at:
http://www.who.int/reproductive-health/family_planning/counselling.html

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Available at: <http://hab.hrsa.gov/publications/womencare05>

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Best, K. 2004. *Family Planning and the Prevention of Mother-to-Child Transmission of HIV: A Review of the Literature*. Family Health International: Research Triangle Park, NC.
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Family Health International. 2001. Female Condom Research Briefs, FHI. Available at:
<http://www.fhi.org/en/rh/pubs/briefs/fcbriefs/index.htm>

Female Health Company. Picture book for FC Condom Demonstration—Flipchart, n.d.
Available at:
http://www.femalehealth.com/resources_PPs/Tool%20How%20to%20insert%20FC_wht.ppt

Glion Call to Action on Family Planning and HIV/AIDS in Women and Children. 3-5 May 2004. International Conference on Population and Development. Available at:
<http://www.unfpa.org/publications/detail.cfm?ID=199&filterListType=>

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- Mofenson, L. 2006. *Overview of Perinatal Intervention Trials. Unpublished.* National Institutes of Health: Washington, DC. Available at: <http://www.womenchildrenhiv.org/wchiv?page=pi-10-02>
- Ministry of Health and Social Welfare. *National Multi-Sectoral Strategic Framework on HIV/AIDS 2003-2007.* Dar es Salaam: National AIDS Control Programme (NACP), The United Republic of Tanzania. January 2003. Available at: <http://www.nacptz.org/publications/NMSF%202003-2007.pdf>
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- Rutenberg, N, Baek, C. 2005. Field experiences integrating family planning into programs to prevent mother-to-child transmission of HIV. *Stud Fam Plann* 2005; 36 [3]: 235-245. Available at: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=16209180&dopt=Abstract
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Available at: <http://www.who.int/reproductive-health/publications/mec/>

WHO. 2001. *New Data on the Prevention of Mother-to-Child Transmission of HIV and Their Policy Implications*. WHO Technical consultation on behalf of the UNFPA/UNICEF/WHO/UNAIDS Inter-Agency Task Team on Mother-to-Child Transmission of HIV: Geneva. Available at: http://www.who.int/reproductive-health/publications/new_data_prevention_mtct_hiv/text.pdf

Module 3: Stigma and Discrimination Associated with HIV/AIDS

Key Related Resources:

EngenderHealth. 2004. *Reducing Stigma and Discrimination Related to HIV and AIDS: Training for Health Care Workers - Trainer's Manual*. EngenderHealth: New York. Available at: <http://www.go2itech.org/pdf/p06-db/db-50688-02.pdf>

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UNAIDS. 2005. *HIV-related stigma, discrimination and human rights violations: case studies of successful programmes*. UNAIDS. Geneva. Available at: http://data.unaids.org/Publications/IRC-pub01/JC316-Uganda-India_en.pdf

Aggleton, P. 2001. *Comparative analysis: Research studies from India and Uganda. HIV and AIDS-related discrimination, stigmatization and denial*. UNAIDS: Geneva. Available at: http://whqlibdoc.who.int/un aids/2000/9291731102_eng.pdf

Bharat, S. 2001. *India: HIV and AIDS-related Discrimination, Stigmatization and Denial*. UNAIDS: Geneva.

Busza, J. 1999. *Literature Review: Challenging HIV-related Stigma and Discrimination in Southeast Asia: Past successes and future priorities*. Population Council: New York. Available at: www.popcouncil.org/pdfs/horizons_paper.pdf

Doherty, T, Chopra, M, et al. 2006. Effect of the HIV epidemic on infant feeding in South Africa: "When they see me coming with the tins they laugh at me". *Bulletin of the World Health Organization*. 84 [2]: 90-96. Available at: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=16501725&dopt=Abstract

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- Ogden, J and L Nyblade. 2005. *Common at its Core: HIV-Related Stigma Across Contexts*. International Center for Research on Women: Washington DC. Available at: http://www.icrw.org/docs/2005_report_stigma_synthesis.pdf
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Module 4: Counselling and Testing

Key Related Resources:

CDC Global AIDS Program, WHO, et al. 2006. *HIV Rapid Test Training Package*. CDC: Atlanta, Georgia. Available at: <http://www.phppo.cdc.gov/dls/ila/hivtraining/default.aspx>

CDC Global AIDS Program, WHO, et al. 2005. *Testing and Counselling for Prevention of Mother-to-Child Transmission of HIV (TC for PMTCT): Support Tools*. CDC: Atlanta, Georgia. Available at: <http://www.womenchildrenhiv.org/wchiv?page=vc-10-00>

WHO. *Online Toolkit for HIV Testing and Counselling* (<http://who.arvkit.net/tc/en/index.jsp>) This Web site provides guidance on planning, implementing, and evaluating HIV testing and counselling services in resource-limited settings for an audience of program managers and their partners in the public and private sectors. It includes resources on stakeholder and community mobilization, management of commodities, capacity building, and good practices in voluntary counselling and testing.

CDC. 2004. Introduction of routine HIV testing in prenatal care – Botswana, 2004. *MMWR Morb Mortal Wkly Rep* 53(46): 1083-6. Available at: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=15565017

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National AIDS Commission, Ministry of Health and Social Welfare, The United Republic of Tanzania. 2003. *National HIV/AIDS Strategic Plan 2003-2007*. Ministry of Health and Social Welfare.

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WHO. 2005. *Scaling-up HIV testing and counseling services*. WHO Geneva. Available at: <http://www.who.int/hiv/pub/vct/counsellingtestingtoolkit.pdf>

WHO. 2003. *The right to know: New approaches to HIV testing and counselling*. WHO: Geneva. Available at: <http://www.who.int/hiv/pub/vct/pub34/en/print.html>

WHO and CDC. 2004. *Rapid HIV Tests: Guidelines for Use in HIV Testing and Counselling Services in Resource-Constrained Settings*. WHO: Geneva. Available at: <http://www.who.int/hiv/pub/vct/en/rapidhivtests/en.pdf>

Module 5: Specific Interventions to Prevent Mother-to-Child Transmission of HIV

Key Related Resources:

Barbara Kinzie. *Antenatal Care*. 2005. USAID Global Health E-Learning Center Online Course *USAID*. Available at: <http://www.globalhealthlearning.org/login.cfm>

Klein, S, Thomson F. 2006. *A Book for Midwives: Care for pregnancy, birth, and women's health*. The Hesperian Foundation: Berkeley, CA. Available at: http://www.hesperian.org/publications_download.php#midwives

WHO. 2003. *Pregnancy, Childbirth, Postpartum and Newborn Care: A Guide for Essential Practice* WHO: Geneva. Available at: <http://www.who.int/reproductive-health/publications/pcpnc/pcpnc.pdf>

WHO. 2006. *Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants in Resource-limited Settings Towards Universal Access, recommendations for a public health approach* 2006 version. Available at: <http://www.who.int/hiv/pub/guidelines/en/>

Women, Children, and HIV (<http://womenchildrenhiv.org>)

An online library of resources on the prevention and treatment of HIV infection in women and children targeted at health workers, program managers, and policy makers in resource-poor settings.

Albrecht S, 2006. Predictors of Nonadherence to Single-Dose Nevirapine Therapy for the Prevention of Mother-to-Child HIV Transmission. *JAIDS* 41(1):114-118. Available at: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=16340483&dopt=Abstract

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Module 6: Infant Feeding in the Context of HIV Infection

Key Related Resources:

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Module 7: Comprehensive Care and Support for Mothers and Families with HIV Infection

Key Related Resources:

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- AIDS Education and Training Centers National Resource Center. 2006. *Clinical Manual for Management of the HIV-Infected Adult*. François-Xavier Bagnoud Center, University of Medicine and Dentistry of New Jersey: New Jersey. Available at: <http://www.aidsetc.org/aetc/aetc?page=cm-00-00>
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- WHO Child and Adolescent Health and Development. http://www.who.int/child-adolescent-health/NUTRITION/HIV_infant. This web site provides information about infant and young child nutrition as well as listing key resources in this field
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Module 8: Safety and Supportive Care in the Work Environment

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Frequently Asked Questions (FAQs)

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