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 **BASICS**

# **BASICS PEDIATRIC HIV TOOLKIT**

## **PARTICIPANT'S MANUAL**

# **TRAINING MODULE: PARTICIPANT'S MANUAL**

**PEDIATRIC HIV ORIENTATION MODULE FOR  
FRONTLINE HEALTH CARE WORKERS:**

*A SHORT COURSE ON USING EVERY OPPORTUNITY TO SAVE  
HIV EXPOSED AND INFECTED INFANTS AND CHILDREN  
THROUGH EARLY IDENTIFICATION*

**JUNE 2009**

### **BASICS III**

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### **Abstract**

This Pediatric HIV Orientation Module for Frontline Health Care Workers provides guidance to health care workers on how to utilize every opportunity within maternal and child health entry points to care at hospitals and health centers to identify early infants and children exposed and infected with HIV and link them to appropriate care as to save their lives and improve their survival, especially the children under the age of five years.

The course is intended for those who work at the front lines of the health care system and attend to parents and children under five. This includes cadres such as clinical officers, nurses, nurse-midwives, community health nurses, medical assistants, district health officers, laboratory technologists, pharmacists, nutrition officers, health surveillance assistants, home-based care workers, and OVC care providers.

The aim is to reach those who work in places that attend to HIV exposed and infected infants and children or their parents or caregivers. These are all potential entry points to care for HIV exposed and infected children and include the following units: ANC, PMTCT, ART, IMCI, MCH, under 5 clinics, Immunization clinics, pediatric inpatient and out patient consultations, TB-HIV clinics, labor and delivery, family planning clinics, nutrition rehabilitation units; home based care, community child health programs and orphans and vulnerable children programs.

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# TABLE OF CONTENTS

Background .....	iii
Acronyms .....	v
Selected Terms and Definitions .....	vii
Welcome, Introductions, Pre-test, Objectives and Course Overview .....	1
Session I HIV and You.....	7
Session II: HIV and AIDS: Background and the Situation in Host Country .....	9
Session III: Prevention of HIV in Infants and Children the Basics of PMTCT .....	17
Session IV: HIV Disease in Infants and Children: Clinical Presentation and Staging.....	25
Session V: HIV Testing in Infants and Children .....	37
Session VI: Comprehensive Continuum of Care for HIV-Exposed and HIV-infected Infants and Children .....	43
Session VII: Optimal Infant Feeding Practices and Young child Nutrition in the Context of HIV .....	53
Session VIII: Follow-up and Referral of Mothers and Infants.....	65
Appendices	
A: WHO Pediatric Clinical Stages.....	71
B: HIV Testing for the Child with Possible HIV Infection/HIV Exposed .....	73
C: Resources on Cotrimoxazole Preventive Therapy with Examples from Malawi .....	75
D: Tips: Giving Medicines to Pediatric HIV/AIDS Patients .....	79
E: Summary of WHO Statement on Breastfeeding, 200681	
F: Sample Table of Supportive Information for Parents on Feeding of Children During and After Illnesses .....	83
Boxes	
1 Immunizations in HIV-infected children .....	1
2. ART Guidelines for children continue to be developed and refined .....	1
3. ART messages which all Health Workers should know and be able to explain.....	1
4. Feeding of the sick child during illness and recovery.....	1
Figures	
1. Natural Course of HIV Infection .....	12
2. Effect of ART .....	12
3. Missed Opportunities for Pediatric HIV: Program Checklist .....	16
4. Passive Transfer of Maternal Antibody to Baby.....	20
5. Four Prongs of PMTCT Programs.....	21

6.	Identifying HIV Exposed and Infected Infants and Children at Health facilities and Community level of care.....	28
7.	Missed Opportunities for Pediatric HIV: Program Checklist .....	30
8.	Missed Opportunities for Pediatric HIV: Program Checklist .....	31
9.	Vicious Cycle of Malnutrition .....	54
10.	Energy Required by Age and the Amount Supplied from Breastmilk.....	58

Tables

1.	Programs and Services reaching Children, Parents and Caregivers of Children .....	3
2.	Session Content and Schedule .....	5
3.	2005 PEPFAR Regional Data.....	14
4.	How is HIV Transmitted from Mother to Child? .....	18
5.	Percent of Facilities Providing Antenatal Care that Provide CD4 Testing.....	23
6.	Review of phases and sources of mother-to-child transmission of HIV and PMTCT..	24
7.	Clinical Conditions or Signs of HIV Infection in Child that May Suggest HIV Infection	29
8.	Program Components and Issues to Scale Up Pediatric HIV Services.....	30
9.	Ensuring Identification and Referral of HIV Exposed and Infected Infants and Children in Host Country .....	32
10.	Clinical Conditions or Signs of HIV Infection in Child that May Suggest HIV Infection	33
11.	Key Risk Factors that Increase Mother to Child Transmission .....	62
12.	Managing Mothers and Infants for Prevention, Care and Treatment of HIV in Infants ...	67
B-1.	HIV Testing In Children Born To Known HIV Positive Women .....	73
C-1.	Cotrimoxazole Dosing Card .....	75
C-2.	Dose by Age: What are the doses of CPT.....	75
C-3.	CPT Card to be kept in the Health Passport .....	76
C-4.	CPT register kept in the Pharmacy .....	77

# BACKGROUND

In 2007, about 2.5 million children under the age of 15 globally were living with HIV. In that year alone, 370,000 children were newly infected with HIV and 270,000 children died of AIDS.

Unfortunately, HIV disease usually advances rapidly in infants infected during pregnancy, labor and delivery, and they often die by the age of one year because they are not diagnosed early enough to benefit from the care and treatment that they need. A recent study in South Africa found that when infants were diagnosed with HIV early (before three months of age), and treated, far fewer died than those in whom treatment was delayed.

Children with HIV suffer from the same childhood illnesses as those who are not infected, however their illnesses last longer, are more frequent, and are often more severe. In addition, children with HIV may respond poorly to standard treatments for childhood illness. Without antiretroviral treatment (ART), most HIV-infected children die before the age of five – roughly half die before their second birthdays (WHO, 2005B).

Furthermore, prevention of common childhood infections through immunization, effective management of childhood illnesses and malnutrition, and prevention and early treatment of opportunistic infections can improve the quality of life of HIV-infected children. HIV counseling and support for children, their caregivers, and their families can considerably improve their quality of life, relieve suffering, and assist in the practical management of illness. ARV treatment can substantially prolong the lifespan of children living with HIV/AIDS and ensure a higher quality of life.

There is currently much effort to prevent infections in infants through expansion of PMTCT programs, providing the means to prevent pregnancy in women with HIV when they do not want to bear a child and to ensure that mothers with HIV live a healthy life and care for their HIV positive and negative infants. There are also very important efforts to ensure that safe breastfeeding is practiced so that infants who are not infected during pregnancy, labor and delivery stay healthy and grow well while they are being breastfed.

There is an urgent need to do a better job of finding infants who are exposed to HIV during pregnancy, labor, delivery and after delivery (post partum) early enough to help them and to prevent needless suffering and early death. They can become healthy children leading normal lives.

Doing a better job of detecting HIV in children is the responsibility of all health workers working at district and rural hospitals, health centres, dispensaries, health outposts, village clinics and communities. Although many providers may not directly treat mothers, infants and children affected by HIV they have an important responsibility to carry the following key messages

- All pregnant women should be tested for HIV as this is an important entry point for many interventions against HIV
- All HIV+ pregnant women should access a package including ART, adequate care during labour and delivery and effective post-delivery follow up including nutritional advice, FP and CPT
- All children born to HIV+ positive women are entitled to a package of care including routine health care, CPT, ART where necessary and nutritional support
- Effective management of HIV + mothers and infants/children is based on maintaining ongoing care beyond delivery—hence the important need to ensure follow up care and support through health facilities and in the community involving all cadres of health workers

- No HIV exposed or infected infant or child should leave a health facility without someone knowing he or she has been exposed or is infected with HIV, or without a referral for what is needed, and a follow-up plan.

This course is critical information for health care workers in health facilities in developing countries. The course will sharpen their attention on HIV exposed and infected infants in their facilities. They will seize currently missed opportunities to find these infants and children and ensure they are referred for diagnosis, care and treatment early in the course of their disease.

Participants are not expected to provide HIV testing and counseling, diagnosis, or treatment for infants and children with HIV. There are other courses, including EID, ART, HTC PMTCT courses, designed to train health care workers to perform such functions. This course is to ensure that those who test and treat children are seeing all of the exposed and infected infants that need to be seen.

# ACRONYMS

AIDS	Acquired immunodeficiency syndrome
AFASS	Acceptable, feasible, affordable, sustainable, safe
ANC	Antenatal care (or antenatal clinic)
ARI	Acute respiratory infection
ART	Antiretroviral therapy
ARV	Antiretroviral
AZT	Azidothymidine (zidovudine)
CHW	Community health worker
CPT	Cotrimoxazole preventive therapy
CTC	Comprehensive treatment center
CTX	Cotrimoxazole
DNA-PCR	Deoxyribonucleic acid – polymerase chain reaction
EBF	Exclusive breastfeeding
EID	Early Infant Diagnosis
EPI	Expanded Programme on Immunization
HAART	Highly active antiretroviral therapy
HCW	Health care worker
HIV	Human immunodeficiency virus
HTC	HIV testing and counselling
IEC	Information, education and communication
IMCI	Integrated Management of Childhood Illness
IMNCI	Integrated Management of Neonatal and Childhood Illnesses
IUD	Intrauterine device
MCH	Maternal and child health
MTCT	Mother-to-child transmission
NGO	Nongovernmental organization
NRU	Nutritional rehabilitation unit
OI	Opportunistic infection
OPD	Outpatient department
OVC	Orphans and vulnerable children

PCP	<i>Pneumocystis Jiroveci</i> pneumonia (formerly <i>Pneumocystis carinii</i> pneumonia)
PCR	Polymerase chain reaction
PEPFAR	President’s Emergency Plan for AIDS Relief
PLHA	People living with HIV and AIDS
PITC	Provider-initiated HIV testing and counselling
PMTCT	Prevention of mother-to-child transmission
SD-NVP	Single dose nevirapine
STI	Sexually transmitted infection
TB	Tuberculosis
U5	Under five
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children’s Fund
WHO	World Health Organization

# SELECTED TERMS AND DEFINITIONS

**Infant:** Any child less than 12 months of age

**Young Child:** Any child between the ages of 1–5 years

**School-Age Child:** Any child between the ages of 6–12 years

**Adolescent:** Any child between the ages of 13–18

**DNA PCR—Deoxyribonucleic acid (DNA) polymerase chain reaction (PCR)** detects HIV-1 DNA in peripheral blood mononuclear cells. It is a qualitative test and gives a “yes” or “no” diagnosis of HIV. The sensitivity approaches 96–99% by 28 days of age. It is reliable in the presence of ARV exposure for PMTCT or maternal ART.

**Dried Blood Spots:** Blood obtained from a heel or finger prick directly onto filter paper and dried at room temperature. It carries less biohazard risk and overcomes blood sampling and logistical obstacles, and can be used for serological and genetic analysis.

**Polymerase Chain Reaction:** Polymerase chain reaction (PCR) enables researchers to produce millions of copies of a specific DNA sequence in approximately two hours. This automated process bypasses the need to use bacteria for amplifying DNA. It allows a single sequence of genetic material to be copied millions of times.

**Rapid Antibody Tests:** Rapid antibody tests detect HIV antibody in whole blood from finger/heel stick or oral sample. Results are available within minutes to half an hour. Sensitivity varies with test. Can be performed by any health worker who has been adequately trained. Rapid tests which have been approved for use in the field can be found at [www.who.int/hiv](http://www.who.int/hiv).



# WELCOME, INTRODUCTIONS, PRE-TEST, OBJECTIVES AND COURSE OVERVIEW



<b>Time:</b>	90 minutes
<b>Activities:</b>	Welcome remarks Participant introductions Pre-test Open discussion
<b>Materials:</b>	PowerPoint of objectives Pre-test Agenda Participant manual

## SESSION OBJECTIVES:

1. Build a sense of comfort and safety among the participants.
2. Give the trainer a sense of the background and level of preparation of the participants.
3. Provide a clear idea to the participants of the importance and objectives of the course and what is planned each day.
4. Engage the participants in the issue of pediatric HIV in their country by providing a brief background.

## BACKGROUND

- In 2007, about 2.5 million children under the age of 15 globally were living with HIV.
- In that year alone, 370,000 children were newly infected with HIV and 270,000 children died of AIDS.
- The challenge is to bring these unreached children into ART programs and to provide them with other interventions which exist such as CPT and effective management of OI's.
- **There are currently many missed opportunities in countries to identify HIV exposed and infected infants and children early so that they are diagnosed before they are severely ill and it is difficult to save them.**
- This course is to increase the numbers of infants and children identified when they present to health facilities.
- Participants are **not expected to provide HIV testing and counseling, diagnosis, or treatment for infants and children with HIV**. There are other courses , including EID, ART, HTC PMTCT courses, designed to train health care workers to perform such functions.
- This course is to **ensure that those who test and treat children are seeing all of the exposed and infected infants that need to be seen.**
- **No HIV exposed or infected infant or child should leave a health facility without someone knowing he or she has been exposed or is infected with HIV, or without a referral for what is needed, and a follow-up plan.**
- This course is intended for **anyone who comes into contact with the parents and caregivers and their infants and children, in a health facility.**

## PURPOSE

The course intends to equip health care workers, particularly those who work with children at the facility and community levels, with the knowledge and skills to ensure that HIV exposed and infected infants and children benefit from HIV prevention, care and treatment services as early as possible. The course is designed to address the many missed opportunities for finding HIV exposed and infected children under five as early as possible.

## TARGET PARTICIPANTS

Health workers who work at the front lines of the health care system – and attend to parents/ caretakers and children under five. This includes clinical officers, nurses, nursing assistants, health surveillance assistants, community health workers, district health officers, laboratory technologists, medical assistants, pharmacists, home craft workers and OVC care providers.

The aim is to reach those who work in places that attend to HIV exposed and infected infants and children or their parents or caregivers. These are all potential entry points to care for HIV exposed and infected children and include the following units:

**Table 1. Programs and Services reaching Children, Parents and Caregivers of Children**

Programs and services reaching children:	Programs and services reaching parents and caregivers of children
<ul style="list-style-type: none"> <li>• Under 5 clinics</li> <li>• Pediatrics – inpatient and outpatient</li> <li>• Immunization clinics, sites, or on EPI teams or Immunization outreaches in the community</li> <li>• Outpatient department (OPD)</li> <li>• Nutritional rehabilitation unit and outpatient therapeutic nutrition programs</li> <li>• TB/HIV Clinic</li> <li>• Community child health programs</li> </ul>	<ul style="list-style-type: none"> <li>• Antenatal clinics (ANC) and PMTCT programs</li> <li>• Family Planning (FP) clinics</li> <li>• Adult ART sites</li> <li>• TB-HIV Clinics</li> <li>• Labor, delivery, postnatal, maternity and waiting mother units</li> <li>• Home based care programs (HBC)</li> <li>• Programs for orphans and other vulnerable children (OVC programs)</li> <li>• Mothers' support groups</li> <li>• People living with HIV and AIDS (PLHA) support groups</li> <li>• Men's support groups</li> <li>• Community outreach programs</li> </ul>

## EXPECTED LEARNING OUTCOMES

At the end of the course, participants will be better prepared to

1. Describe how children get HIV, how to prevent transmission to infants, and how HIV disease affects infants and children.
2. Discuss what communities know and what is being done for children with HIV , including HIV testing, care and treatment.
3. Explain the issues faced when trying to diagnose HIV in an infant from birth to 18 months and later in terms of testing, symptoms, etc. and the steps a health provider should take if he/she thinks and an infant or child needs HIV testing.

4. Discuss host country guidelines on HIV counseling and testing in children, current PMTCT program guidelines in terms of testing, ARV prophylaxis, follow-up, feeding counseling, nutritional support, postpartum care.
5. Discuss infant feeding, nutrition and micronutrient supplementation for HIV infected infants, including infant feeding counseling.
6. Make a checklist of steps to take to improve the diagnosis, care and treatment of infants and children with HIV in the place(s) where you work.
7. Describe the unique needs of mothers, infants, toddlers, school age children and adolescents in terms of how having HIV can affect their lives.
8. List the components of a comprehensive care package for an infant or child with HIV.
9. Demonstrate the ability to correctly manage referral and follow up support for several cases related to HIV in children, from HIV diagnosis through care and treatment.

**Table 2. Session Content and Schedule**

<b>Session</b>	<b>DAY 1</b>			
	Welcome, introductions, pre-test, objectives and course overview		Facilitated interaction, Interactive exercise	90 minutes
I	HIV and You and HIV in Infants and Children (including 15 minute break)		Group and plenary discussion	90 minutes
II	HIV and AIDS Epidemic Background and Situation in ____ name of country		Presentation with Q and A	30 minutes
	LUNCH			60 minutes
III	Prevention of HIV in Infants and Children and the Basics of PMTCT		Presentation with Q and A	60 minutes
IV	HIV Disease in Infants and Children: Disease Progression, Clinical Diagnosis and Testing		Presentation, Demonstration Cases	90 minutes
	<b>BREAK</b>			15 minutes
V	National Policies and Guidelines on HIV Testing in Children		Presentation/Q &A	60 minutes
	Review, preview, wrap up			15 minutes
<b>Session</b>	<b>DAY 2</b>			
	Review of Day 1, preview of Day 2, Q and A		Facilitated presentation/discussion	20 minutes
VI	Comprehensive Care for HIV Exposed and Infected Infants and Children		Presentation	2 hours
	<b>BREAK</b>			15 minutes
VII	Infant feeding and Nutrition Issues Include 15 minutes <b>break</b>		Presentation, Cases	2 hours
	<b>LUNCH</b>			60 minutes
VIII	Mother-Infant Pair Follow-Ups and Referrals		Presentation, small group exercises and action planning	90 minutes
	Post test and review of post test			40 minutes
	Course Evaluation and Wrap Up			45 minutes



## **KEY POINTS**

***All health care workers play a critical role in ensuring that exposed and infected infants and children do not leave facilities without being assessed for HIV and ensured proper follow-up, care and treatment.***

# SESSION I



## HIV AND YOU

### SESSION OBJECTIVES:

At the end of this session, participants will be better able to

1. Describe their beliefs and attitudes about HIV.
2. Explain the state of understanding of the average person in the host country about HIV in infants and children.
3. Share their thoughts and feelings about their work in HIV.
4. Clarify and be focused about their learning objectives for this module.

### The following statements are written on the handout and the PowerPoint

1. The first time I heard about HIV was...
2. When I heard this disease described, I thought...
3. When I first heard that babies could be born with HIV, I thought...
4. In my own family and community what people say about HIV in babies is something along the lines of ...
5. What I most want to know about HIV in infants and children in the next few days is...
6. I am most concerned about...
7. I am most interested in...
8. I am most confused about...
9. My most rewarding experience related to HIV (can be work or home) was when...
10. My most difficult experience was when...



# SESSION II



## HIV AND AIDS: BACKGROUND AND THE SITUATION IN HOST COUNTRY

**Time:** 45 minutes

**Activities:** Open discussion followed by presentation, Q and A

**Materials:** PowerPoint presentation

Session timing

### SESSION OBJECTIVES:

At the end of this session participants will be better prepared to:

1. Define HIV and AIDS.
2. Discuss the differences between HIV infection and AIDS.
3. Explain modes of HIV transmission.
4. Describe approaches to HIV prevention.
5. Discuss the HIV epidemic in terms of
  - numbers infected,
  - the impact on societies, families and communities and
  - the national response to the epidemic
6. Discuss progress and problems related to the national response to HIV, services for people living with HIV.

## HIV AND AIDS

HIV (human immunodeficiency virus) is the virus that causes AIDS. This virus may be passed from one person to another when infected blood, semen, or vaginal secretions come in contact with an uninfected person's broken skin or mucous membranes\*. In addition, infected pregnant women can pass HIV to their baby during pregnancy or delivery, as well as through breast-feeding. People with HIV have what is called HIV infection.

- The immune system is the body's defense against disease and HIV, the human immunodeficiency virus, causes the immune system to gradually deteriorate, resulting in what is called AIDS.
- AIDS is an acronym for Acquired Immunodeficiency Syndrome and refers to the most and advanced severe stage of HIV infection.

**A:** Acquired—not inherited

**I:** Immune—affecting the immune system

**D:** Deficiency—inability to protect against illness

**S:** Syndrome—a group of symptoms or illnesses that occur as a result of an infection

This means that a person with HIV experiences many HIV-related infections and other conditions such as tumors, many of which become severe and require intensive treatment. Example: Severe thrush and shingles

## DIAGNOSIS OF HIV

### TYPES OF HIV TESTS

HIV antibody tests detect antibodies that the immune system forms against HIV. These tests do not detect the virus itself. There are several types of HIV tests.

#### Antibody tests

The one most commonly used as the first simple test is an antibody test. These tests detect the presence of antibodies to HIV.

The commonly used antibody test is a rapid test such as Determine or Unigold which are brand names of different rapid antibody tests. One test is used to determine the diagnosis if the first test is negative then the result is negative but if the first test is positive then a second test is used to confirm the first positive result. This is known as serial testing.

The advantages of the rapid type of antibody test are that they do not require sophisticated laboratory equipment and most health care workers and even lay people can learn to do these tests accurately with some training. Most importantly, the results can be given to the patient the same day that the test is done.

#### Antigen or virological tests (PCR)

Antigen or virological tests detect the presence of the HIV virus itself. These tests are more expensive and require more complex equipment and training.

These tests are used in infants below the age of 18 months. This is important for early infant diagnosis because the infant still has the mother's antibodies so that an antibody test will detect the mother's antibodies and cannot reliably say whether the infant is infected or not.

### **Concept of the Window Period**

THERE IS A PERIOD AFTER A PERSON BECOMES INFECTED WITH HIV WHEN THE VIRUS IN THEIR BLOOD INCREASES VERY RAPIDLY AND THEY EXPERIENCE A BRIEF FLU-LIKE ILLNESS.

IF AN HIV ANTIBODY TEST IS DONE DURING THIS TIME, THE PERSON'S TEST RESULT WILL BE NEGATIVE EVEN THOUGH THEY ARE INFECTED WITH HIV.

- THIS IS CALLED THE **WINDOW PERIOD**.
- THREE MONTHS AFTER INFECTION THE TEST WILL BE POSITIVE.
- THE IMPORTANCE OF THIS PERIOD IS THAT IT IS DURING THIS TIME THAT A PERSON IS MOST INFECTIOUS TO OTHERS.
- IT IS IMPORTANT TO REPEAT NEGATIVE TESTS IN PERSONS AT RISK, INCLUDING PREGNANT AND BREASTFEEDING WOMEN.

## **SPECIAL LABORATORY TESTS USED IN PEOPLE WITH HIV**

### **CD4**

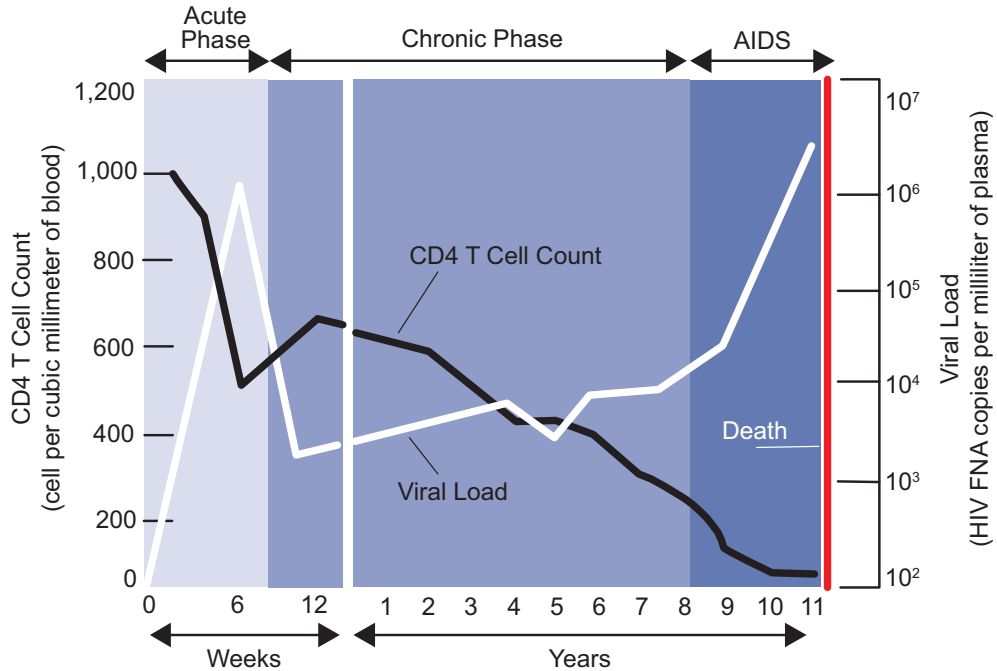
- A type of blood cell that is an important marker of your immune system
- CD4 cells are part of the body's defense against infection.
- Their numbers decline throughout the course of HIV infection, as the immune system becomes overwhelmed
- There is a blood test that counts the number of CD4 cells in the blood.
- In children it is the percentage that is important because the number changes as a child gets older.
- The cells in the body that are destroyed by HIV are called CD4 cells.
- As the number of these cells decrease the virus in the blood increases.
- Depending on the level of CD4 cells people develop different infections and eventually AIDS.

### **VIRAL LOAD**

- a measure of the severity of a viral infection
- can be calculated by estimating the amount of virus in an involved body fluid, such as blood
- Determination of viral load is part of the therapy monitoring during HIV treatment.
- The drugs that treat AIDS increase the CD4 cells and the HIV virus in the blood decreases resulting in fewer infections and greater quality life. These drugs called ARVs mean that there is now hope for people who become infected with HIV. They no longer have to assume that they will die of AIDS.

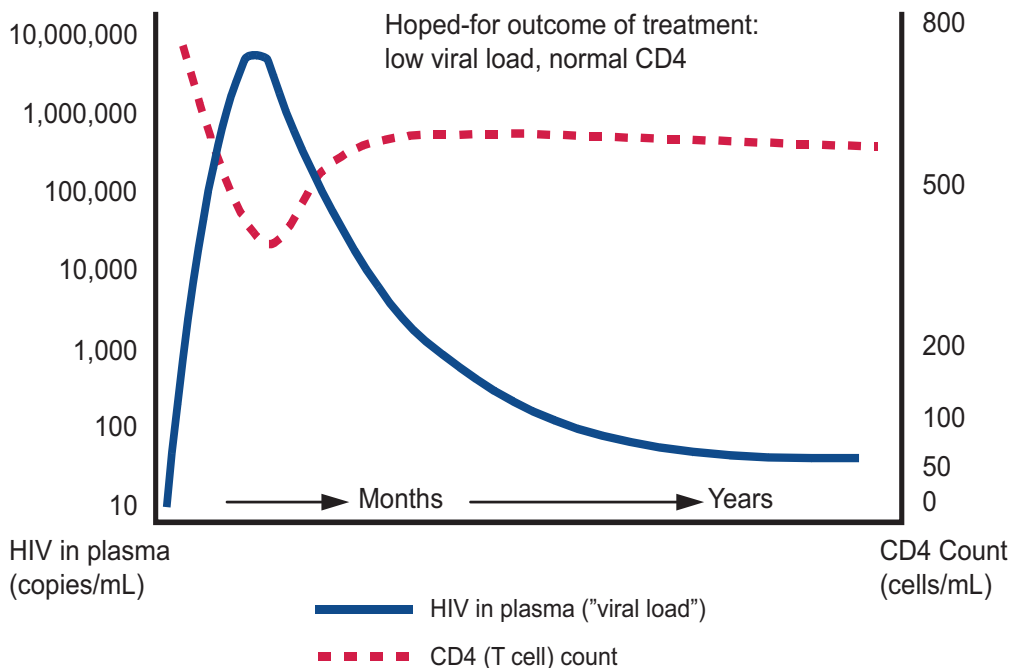
The natural course of HIV infection in the absence of antiretroviral treatment is shown in Figure 1 below. As the patient's HIV viral load increases, the CD4 count decreases.

**Figure 1. Natural Course of HIV Infection**



The effect of ART is the reverse: the viral load **decreases** and the CD4 count rises, as shown in Figure 2 below, resulting in fewer infections and illness, weight gain and a better quality of life. Treatment is discussed in greater detail later in the module. (See diagrams

**Figure 2. Effect of ART**



## **HIV TRANSMISSION**

### **HIV can be transmitted from one person to another in several ways**

- The most common form of transmission in the world is sexual

*Other ways in which HIV is transmitted include*

- Transmission from a mother to her infant during pregnancy, labor, delivery or breastfeeding
- Occupational exposure to needle stick or other sharps injuries or splashes with infectious blood or bodily fluids
- Transmission can occur through needle sharing during drug use,

Prevention of transmission is through avoidance of situations in which exposure occurs or by taking medications to prevent transmission, such as ARV prophylaxis through PMTCT programs or post-exposure prophylaxis (PEP) after rape or an occupational exposure.

## **HIV PREVENTION**

### **General approaches to HIV prevention include**

- Abstaining from sex
- Practicing mutual faithfulness after determining HIV status of both partners
- Consistent and correct use of condoms
- Screening blood before transfusion
- Adhering to infection control measures
- Post Exposure prophylaxis (PEP)
- Prevention of mother to child transmission of HIV through ARV prophylaxis, modifying delivery practices to reduce transmission and ensuring safe infant feeding practices.

## **HIV IN INFANTS AND CHILDREN**

### **Global Data**

- Annually, more than 700,000 children are infected with HIV globally.
- The most common route by far of HIV transmission for children is mother- to-child transmission (MTCT).
- In 2007, about 2.5 million children under the age of 15 globally were living with HIV. In that year alone, 370,000 children were newly infected with HIV and 270,000 children died of AIDS (UNAIDS, 2007)

*From: Progress for Children : A world fit for children statistical review, no. 6, December 2007, UNICEF.*

### **Regional Data**

It is known that of all of the children in the world living with HIV, 90% live in Africa. A report for the President's Plan for Emergency Relief (PEPFAR) in 2005 showed the following as an example of the number of children in this region.

**Table 3. 2005 PEPFAR Regional Data**

Country	No. of children with HIV
Mozambique	140,000
Kenya	150,000
South Africa	240,000
Zambia	130,000
Uganda	110,000

The percentage of children in the region in 2006 needing antiretroviral treatment who received it was about 3% in west and central Africa and about 17% in Eastern and Southern Africa.

### **Example of Country HIV Statistics (Malawi)**

- 89,025 children aged less than 15 years are infected with HIV
- 2,286 children are on ART
- Pregnant women tested for HIV– over 50% of all pregnancies
- HIV Positive pregnant women– 9–12%
- HIV positive pregnant women who received ARV prophylaxis 50% of those in need
- Newborns who received ARV prophylaxis 17% of those in need

*MOH/Malawi PMTCT 2007*

## **PREVENTING HIV IN INFANTS AND CHILDREN**

PMTCT is discussed in detail in Session III.

To protect children we must prevent HIV infection in women; ensure that women have a way to decide when they want to get pregnant and to prevent unwanted pregnancies.

When women with HIV do get pregnant they must access PMTCT programs and practice safe infant feeding practices to prevent transmission to their infants.

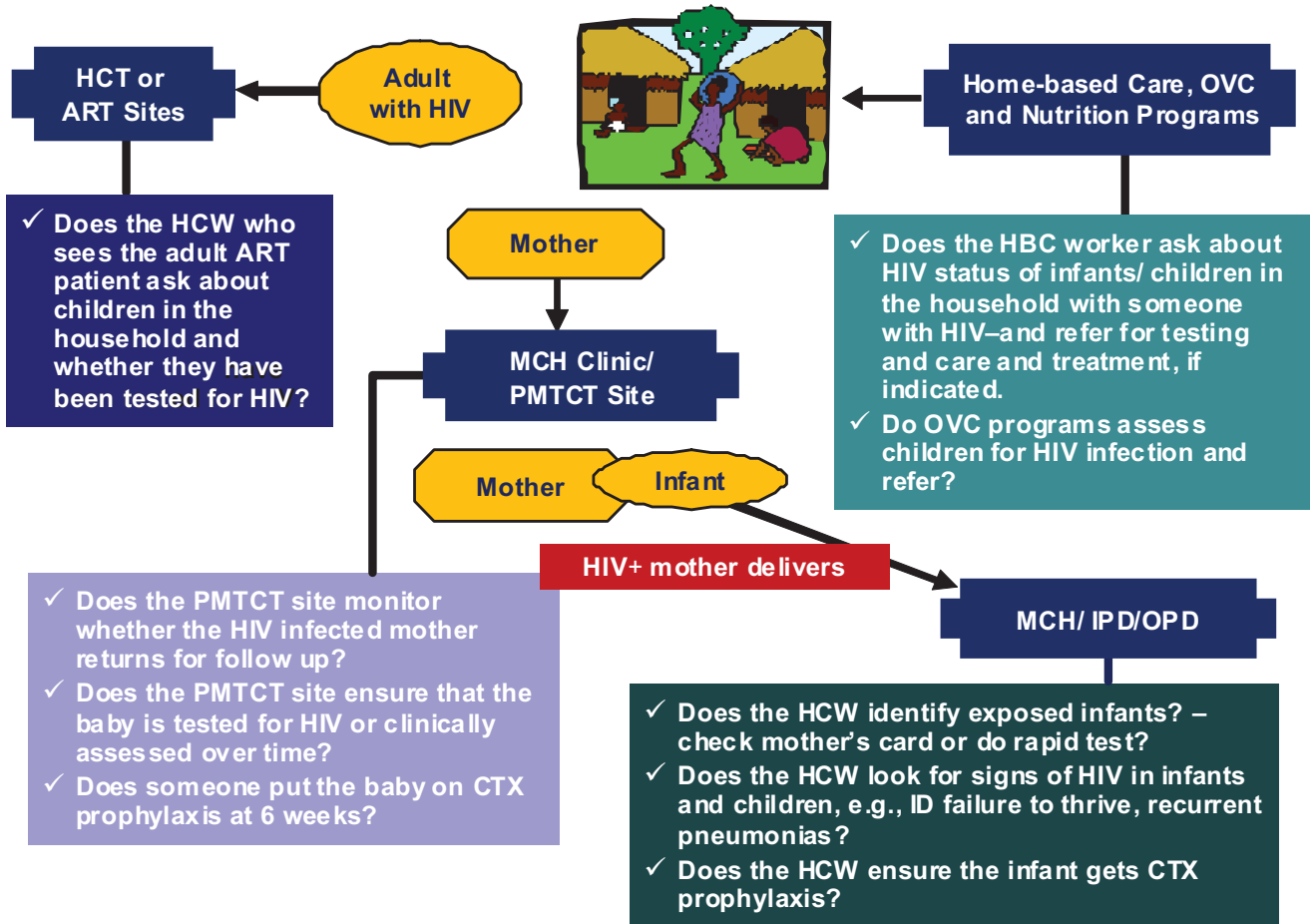
It is of critical importance to keep mothers with HIV alive as we know that infants are more likely to die if their mothers are not alive to care for them, even if the infant does not have HIV.



## KEY POINTS

- HIV IS THE VIRUS THAT CAUSES AIDS AND RESULTS IN A PERSON EXPERIENCING MANY ILLNESSES AND INFECTIONS. TREATMENT CAN ENSURE THEY LIVE A PRODUCTIVE LIFE
- THE TESTS THAT USED TO DIAGNOSE HIV DEPEND ON THE AGE OF THE PERSON. ANTIBODY TESTS ARE MOST APPROPRIATE FOR CHILDREN OLDER THAN 15–18 MONTHS. VIROLOGICAL TESTS OR CLINICAL DIAGNOSIS ARE USED IN YOUNGER INFANTS AND THE VIROLOGICAL TESTS ARE BECOMING MORE COMMONLY AVAILABLE USING DBS-PCR.
- SEXUAL TRANSMISSION OF HIV IS THE SOURCE OF MOST HIV TRANSMISSION IN SUB SAHARAN AFRICA.
- HIV CAN BE PREVENTED THROUGH MANY APPROACHES INCLUDING ABSTINENCE, DECREASING THE NUMBER OF SEXUAL PARTNERS AND MUTUAL FAITHFULNESS, CONDOMS AND ARVs AND OTHER METHODS TO DECREASE TRANSMISSION FROM A MOTHER TO HER INFANT.
- HIV IN CHILDREN IS A PROBLEM IN MANY COUNTRIES IN SUB SAHARAN AFRICA. MUCH NEEDS TO BE DONE TO ENSURE THAT INFANTS DO NOT GET INFECTED AND TO HELP THOSE WHO DO GET INFECTED EARLY SO THEY DO NOT DIE.

Figure 3. Missed Opportunities for Pediatric HIV: Program Checklist



# SESSION III



## PREVENTION OF HIV IN INFANTS AND CHILDREN THE BASICS OF PMTCT

**Time:** 75 minutes

**Activities:** Presentation followed by Q and A

**Materials:** PowerPoint presentation or flip charts prepared in advance

Handout:

### **OBJECTIVES:**

At the end of this session participants will be better prepared to:

1. Describe how HIV is transmitted from mothers to their babies.
2. Describe the four PMTCT prongs to prevent mother to child transmission of HIV.
3. Discuss how to implement the four prongs in their facility.

## How is HIV transmitted from mother to child?

HIV-positive women can transmit HIV to their infants during pregnancy, birth, or while breast feeding. This occurs when there is a mixing of blood between the mother and child (during pregnancy when the virus can cross the placenta from mother to child), or the mixing of body fluids (during breastfeeding when the virus may be transmitted to the child. This is called mother to child transmission or MTCT.

## When is HIV transmitted from the mother to the child

During pregnancy, labor and delivery, the risk of HIV transmission from mother to child is between 20–50% (without interventions such as ART). In other words—20 to 50 children born to a 100 HIV + women will be infected by the virus. Different periods of pregnancy have different risks which are as follows (see Table 4):

- 5–10% during pregnancy.
- 10–20% during labor and delivery.
- 5–20% during breast feeding
- And, the virus can be transmitted at any time the newborn has contact with the blood or bodily fluids of the HIV positive mother:

Table 4 below explains how this happens during pregnancy, labor, delivery and breastfeeding.

**Table 4. How is HIV Transmitted from Mother to Child?**

Phase	Fluid which is shared	Prevention messages
Pregnancy (pre-delivery)	Blood	<ul style="list-style-type: none"> <li>• HTC – It is important for a pregnant woman to know her HIV status so she can prevent transmission to her infant.</li> <li>• Avoid risky maneuvers on the uterus during pregnancy like correcting an abnormal lie of a baby using external cephalic version.</li> <li>• ARVs (both HAART and PMTCT specific drugs) – there are drugs for the mother and the baby that prevent HIV transmission to the infant. Some of the same drugs in different combinations are also important for treatment of the mother if her HIV disease has progressed to the point that she needs ART.</li> </ul>
Delivery	Blood Body fluids	<ul style="list-style-type: none"> <li>• Good birthing practices include avoiding practices such as routine episiotomy, premature rupture of membranes and instrumental deliveries.</li> <li>• Use of protective gear-mask, gloves, booths, aprons, goggles etc as part of universal precaution for infection prevention.</li> <li>• ARVs – It is important to remember to give the baby its dose of ARV prophylaxis. Continuous assessment of the mother and the infant for their need for ART is critical.</li> </ul>
Breastfeeding (post-delivery)	Breast milk	<ul style="list-style-type: none"> <li>• Mothers need help and encouragement to practice EBF till 6 months (no complementary feeding). This is the best food for the baby (this will be discussed further in Session 7)</li> </ul>

## Maternal factors that increase the rate of transmission

The following factors related to the mother's health and HIV status can increase the rate of transmission:

1. If the woman has a high viral load, she is more likely to transmit the virus to the infant.
2. A woman with severe HIV disease (her immune system is not functioning well, with CD4 count below 200) is more likely to transmit HIV to her infant.
3. If the mother has poor nutrition, with micronutrient deficiencies, she is more likely to transmit HIV to the infant.
4. If the mother becomes infected with HIV or has other infections, such as malaria, during pregnancy or breastfeeding, the levels of the virus can go very high and at those times she is more likely to transmit HIV to the fetus or infant.
5. Duration of breastfeeding
  - If a mother breastfeeds till 6 months, the rate is 25–35% and
  - If breastfeeding goes on till 18-24 months, the rate is 30–45%.

In countries where **malaria** is common, it is important to pay attention to the interaction between malaria and HIV.

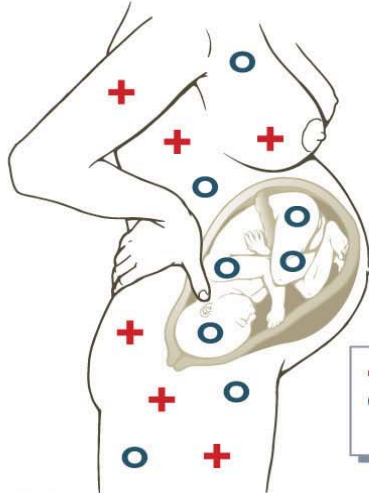
- HIV infection impairs the immune response during pregnancy and diminishes a pregnant woman's ability to control *Plasmodium falciparum*, or malaria infections. HIV infection also increases the risk of malaria-associated problems with pregnancy outcomes.

The diagram in Figure 4, "Passive Transfer of Maternal Antibody" shows the transfer of maternal antibodies and HIV virus in one baby (Mother 2 and Baby 2) and not the other (Mother 1 and Baby 1). This also explains HIV test results in infants before and after they excrete the mother's antibodies (HIV antibody test negative), and in those with and without actual HIV virus from the mother.

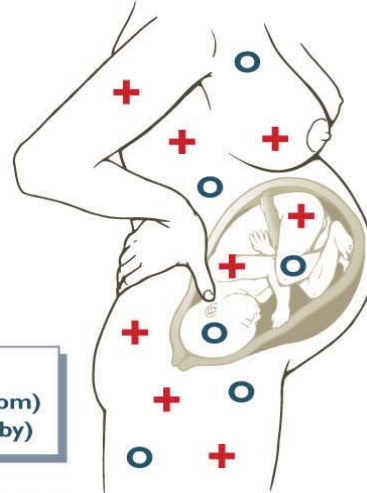
Figure 4. Passive Transfer of Maternal Antibody to Baby

## Passive Transfer of Maternal Antibody

Mother 1



Mother 2



- + HIV infection
- HIV antibody (mom)
- HIV antibody (baby)

**Baby 1:**

- Has received HIV antibody ONLY
- Does not have HIV infection
- Will have a negative viral test
- Will have positive antibody test until 18m
- 70-80%

**Baby 2:**

- Has received virus and mother's antibody
- Has a positive viral test
- Has a positive antibody test
- Does have HIV infection and will go on to develop symptoms of illness over time
- 20-30%

Birth

6 months

12 months

18 months



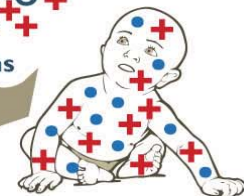
- Negative antibody test
- Sero Reverter
- Baby does not and never did have HIV infection

Birth

6 months

12 months

18 months



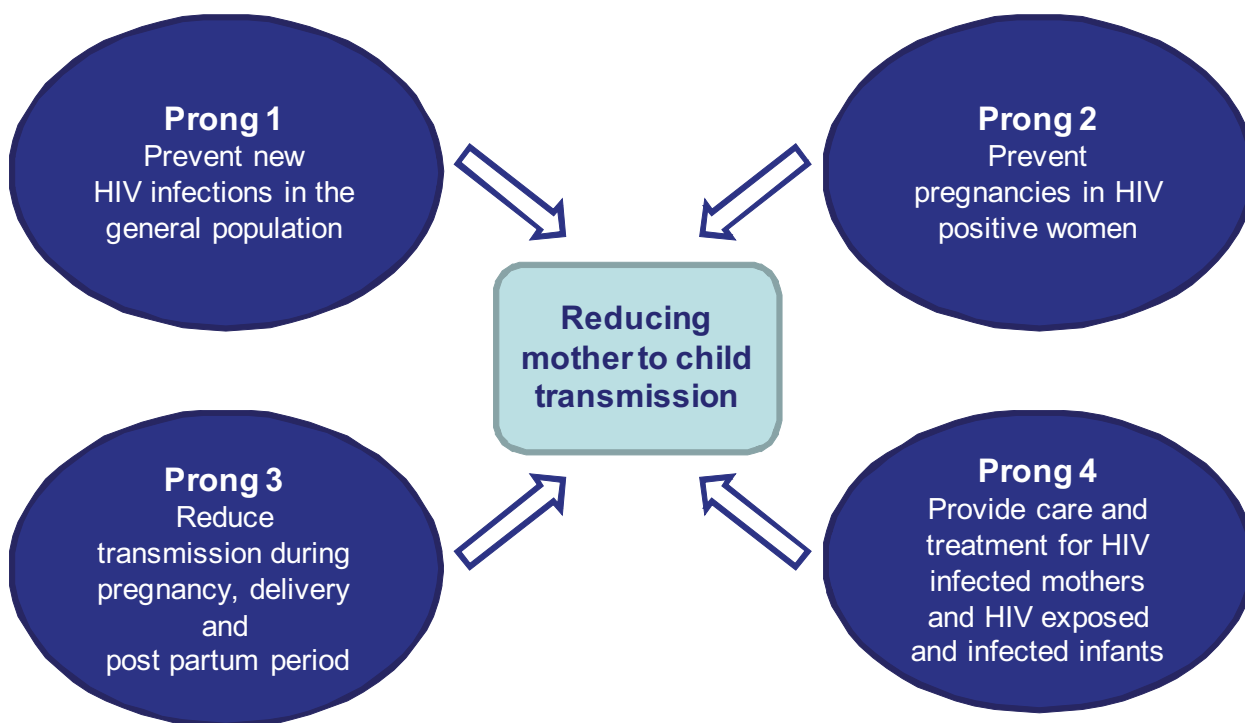
- Positive antibody test
- HIV Culture/PCR Positive
- HIV infected. Over time will develop symptoms of disease

Preventing Mother to Child Transmission of HIV (PMTCT)

Most national PMTCT program includes four prongs:

These four prongs are aimed at contributing towards the reduction of new infections (see figure 5 below).

**Figure 5. Four Prongs of PMTCT Programs**



### **Prong 1**

Primary prevention of HIV infection in the general population among women of childbearing age and their partners, especially in young women and pregnant women.

### **Prong 2**

Prevention of unintended pregnancies among HIV-infected women

- Family planning is a core PMTCT intervention
- Women who are HIV positive need support on family planning in order to prevent unintended pregnancies and therefore reduce the number of infants with MTCT of HIV.

### **Prong 3**

Prevention of transmission of HIV infection from HIV infected pregnant women to their infants during pregnancy, labor and delivery, and postnatally through breastfeeding.

- a. In order to prevent the transmission of HIV from a pregnant woman to her infant, it is important to provide pregnant women with information about their HIV status and what to do for themselves and their infants.

In some countries such as Malawi, women of childbearing age, adolescents, pregnant women, and their partners and family planning clients are routinely offered testing and counseling for HIV (HTC). In this way, the HIV status of those who make decisions about bearing children and those who will be mothers and fathers is known as early as possible so pregnancies can be planned and infants can be protected from HIV. This is also the best way to ensure that those who need HIV services access them and stay healthy for as long as possible.

- b. Reduce the risk of transmission to the fetus or infant by providing ARV prophylaxis to the mother and the infant.

Provide the best available regimen of ARVs according to national guidelines. The new WHO PMTCT Guidelines provides guidelines for combination ARV prophylaxis regimen for PMTCT which is AZT+SD-NVP in sites where Hemoglobin can be monitored. However SD-NVP is continued in other countries.

- c. Reduce infant exposure to the virus during labor and delivery
  - a. Avoid artificial rupture of membranes
  - b. Avoid prolonged rupture of membranes
  - c. Avoid routine episiotomies
  - d. Avoid needless and vigorous suctioning of the infant's mouth and pharynx
  - e. Avoid instrument delivery
- d. Reduce infant exposure to the virus through safer feeding options
  - a. Practice optimal infant feeding which we will discuss in the session on infant feeding.
  - b. Factors related to breastfeeding that increase the risk of transmission of HIV to the infant
    - longer duration of breastfeeding
    - mixed feeding—feeding the infant food and fluids in addition to breast milk before the age of six months
    - breast conditions—examples
      - breast abscesses
      - nipple fissures
      - mastitis

#### **Prong 4:**

Provide HIV care, treatment and support to HIV-infected women, children and their families.

Keeping the mother alive is extremely important to the health of the infant. While this course focuses on the infant or child with HIV, it is known that even uninfected children are more likely to die if their mother dies. Part of caring for infants and children with HIV is caring for their mother.

During the mother's attendance at ANC, or through the community for mothers who do not attend ANC, it is important to support the mother infected with HIV to receive care and treatment as early as possible. This entails clinical and laboratory monitoring of her HIV disease, cotrimoxazole prophylaxis and ART if eligible during pregnancy.

To the greatest extent possible, it is best to care for the mother and the baby together rather than giving them separate appointments at different locations on different dates, causing great expenditure of the family's time, money and energy.

It is important to remember that

- Even uninfected children are more likely to die if their mother dies. It is important to remember that part of caring for infants and children with HIV is caring for their mother.
- Recent data from Malawi shows the need to do some work in this area:

*“... ..although overall access to antiretroviral therapy among women is higher than or equal to that among men, pregnant women living with HIV have poor access to antiretroviral therapy for their own health. , among 9,150 women who started antiretroviral therapy in the last quarter of 2007 in the public sector, only 343 (4%) had been referred from the programme to prevent mother-to-child transmission.”*

*From Towards Universal Access: Scaling up priority HIV/AIDS interventions in the health sector 2008, WHO, UNAIDS, UNICEF.*

**Table 5. Percent of Facilities Providing Antenatal Care that Provide CD4 Testing**

Country	% of Facilities Providing Antenatal Care that Provide CD4 Testing On-Site or Have Systems for Collection and Transport
Botswana	100
Central African Republic	2
Haiti	55
Lesotho	10
Malawi	66
Papua New Guinea	12
Swaziland	31
Zambia	18
Zimbabwe	5

*From Towards Universal Access: Scaling up priority HIV/AIDS interventions in the health sector 2008, WHO, UNAIDS, UNICEF.*

**Table 6. Review of phases and sources of mother-to-child transmission of HIV and PMTCT**

Phase	Shared Fluid	Prevention messages
Pregnancy (pre-delivery)	Blood	<p><b>HTC</b> – It is important for a pregnant woman to <b>know her HIV status</b> so she can prevent transmission to her infant.</p> <p><b>ARVs (both HAART and PMTCT specific drugs)</b> – there are drugs for the mother and the baby that <b>prevent HIV transmission</b> to the infant. Some of the same drugs in different combinations are also important for treatment of the mother if her HIV disease has progressed to the point that she needs ART.</p>
Delivery	Blood  Body fluids	<p><b>Good birthing practices</b> include avoiding practices such as episiotomy, premature rupture of membranes.</p> <p><b>ARVs</b> – It is important to remember to give the baby its dose of ARV prophylaxis. Continuous assessment of the mother and the infant for their need for ART is critical.</p>
Breast-feeding (post-delivery)	Breast milk	Mothers need help and encouragement to practice <b>EBF</b> till 6 months (no complementary feeding).



## KEY MESSAGES

- ALL HIV POSITIVE PREGNANT WOMEN CAN TRANSMIT HIV TO THEIR BABY DURING PREGNANCY, AT BIRTH AND DURING BREAST FEEDING.
- THE NATIONAL PMTCT STRATEGY RECOMMENDS THAT ALL PREGNANT WOMEN SHOULD BE TESTED FOR HIV.
- THERE ARE INTERVENTIONS WHICH PREVENT THE TRANSMISSION OF HIV FROM THE MOTHER TO THE BABY – ALL PREGNANT WOMEN SHOULD ACCESS THESE INTERVENTIONS.
- FOR MOTHERS WHO CHOOSE TO BREASTFEED, IT IS IMPORTANT TO PRACTICE EXCLUSIVE BREASTFEEDING FOR THE FIRST 6 MONTHS.

# SESSION IV



## HIV DISEASE IN INFANTS AND CHILDREN: CLINICAL PRESENTATION AND STAGING

<b>Time:</b>	1.5 hours or 90 minutes
<b>Activities:</b>	Presentation, demonstration, case studies
<b>Materials:</b>	PowerPoint presentation or flip charts prepared in advance
<b>Handout of table:</b>	Program Components and Issues to Scale Up Pediatric HIV Services

### OBJECTIVES:

At the end of this session participants will be better prepared to:

1. Discuss the need for early diagnosis, care and treatment of HIV exposed and infected infants and children.
2. Describe how HIV disease progresses in infants and children.
3. Identify and discuss signs and symptoms of HIV in infants and children.
4. Discuss the needs of infants and children with HIV and their families in terms of facility and community services.

## THE NEED FOR ACTION ON PEDIATRIC HIV

- More action is needed to ensure that children born with HIV can live a healthy life.
- There are many **missed opportunities** to identify infants and children with HIV before they become very sick.
  - More infants and children with HIV need to be identified on pediatric wards, at under five clinics, in the NRU, at adult ART sites, in communities and at other potential entry points to care. All health workers should think **“Is this child affected by HIV?”**
- Each person working at the community and facility level has a role to play in helping to save and improve the lives of infants and children with HIV.
- We will focus on children under five but it is important to keep in mind that national programs and training should prepare the health system to help all children with HIV. They are of different ages, have different needs and HIV disease presents and progresses differently, depending on the child’s age.
- The purpose of this course is to ensure that more infants with HIV get the care and treatment they need before it is too late.

## THE STARTING POINT FOR SCALING UP PEDIATRIC HIV SERVICES IS TO ADDRESS HIV EXPOSED INFANTS.

The action steps for exposed infants include

### Action steps for HIV Exposed Infants

- Ensure both mother’s and infant’s medical records including passports indicate the mother’s HIV status
- Check the passports at every postnatal, under five visit, home visit
- All exposed children should be referred for testing and counseling
- Children with signs and symptoms of HIV, as detailed later in this session, should also be referred for testing and counseling
- Siblings of children with should be referred for testing and counseling
- Orphans and vulnerable children are at risk of HIV infection and should access HIV testing and counseling
- Expand PMTCT coverage
- Establish links from the facility to the community
- Ensure health care worker follow up of home deliveries, and missed appointments for postnatal, under five clinics
- Pilot early virological HIV testing at 6 weeks wherever possible (including using DBS-PCR)
- Introduce earlier antibody testing (9–12 months)
- Institutionalize Co-trimoxazole prophylaxis at six weeks of age

## **HIV DISEASE IN CHILDREN**

It is important to understand how HIV disease in children is different from HIV disease in adults and, especially, how infants and children under five are affected and what they need. HIV infection follows a more aggressive course among infants and children than among adults.

- 30% die by age 1 year, and 50% die by age 2 years without access to ART and CPT
- Early diagnosis of HIV, timely provision of effective care and treatment for common childhood illnesses, opportunistic infections and antiretroviral therapy can prevent these deaths in infants and children.”
- Children surviving the first year of life are more likely to die from common childhood illnesses.
- Children with HIV suffer from the same childhood illnesses as those who are not infected.
- However their illnesses last longer, are more frequent, and are often more severe.
- In addition, children with HIV need to be treated aggressively for childhood illnesses.
- The commonest causes of death in infants and children who have HIV are
  - respiratory infections/ pneumonia
  - diarrhea, and
  - tuberculosis

These commonly result from several risk factors, including opportunistic infections and under nutrition, with death from all causes being greatest among those with low weight.

- Poor nutritional status makes children who have HIV more likely to get sick and die, even while they are receiving antiretroviral therapy. (From *UNICEF Programming Guide DRAFT 2008*)
- Without ART and CPT, most HIV-infected children die before the age of five.
- HIV exposed and infected children need routine as well as HIV specific child health services including;
  1. Prevention of common childhood infections through immunization
  2. Effective management of childhood illnesses and malnutrition

They also need

1. Prevention and early treatment of opportunistic infections (CPT)
2. HIV counseling and support for children, their caregivers, and their families
3. ARV treatment when the child needs it by clinical and laboratory measures – this can substantially prolong the lifespan of children living with AIDS and ensure a higher quality of life.

## **HIV DIAGNOSIS IN INFANTS AND CHILDREN**

A large challenge in providing HIV care services to children is actually finding the children who need the services. Children depend on parents and caregivers to be sure they are tested for HIV. It is important that national programs design strategies to be sure that children who need services are identified and followed.

As illustrated in the following table, children fall into several categories, depending on how far along their HIV disease is—many do not have symptoms and we don’t even know they are exposed or infected while others are at different stages of their HIV disease.

The importance of ensuring that infants born to women with HIV are “tracked” is highlighted by the following 2005 finding from Malawi. Knowing a mother has HIV is only one part of what she needs—her care and her baby’s care after delivery must follow.

*, 75% of 646 children born to HIV-infected women were lost to follow-up at 6 months. As a result, less than 5% of HIV-infected children that require ART are receiving it, and only 1% of children born to HIV-infected mothers have access to cotrimoxazole.*

- In order to save children with HIV we must first know they are exposed or infected.
- Constant vigilance for HIV-infection in every child that enters a health facility or receives community services is essential.

## FINDING HIV EXPOSED AND INFECTED INFANTS AND CHILDREN

It is important to think of all of the ways in which HIV exposed and infected infants and children can present—there are cases where we don’t know if the mother has HIV or not, and some infants are symptomatic while others are not. The table ‘Finding HIV Exposed and Infected Infants and Children’ shows all of these different situations, suggests where to look for exposed and infected infants and children.

**Figure 6. Identifying HIV Exposed and Infected Infants and Children at Health facilities and Community level of care**

Finding HIV Exposed and Infected Infants and Children	
HIV Status	Case Finding: Identification of Exposed and Infected Infants and Children
Unknown/asymptomatic	At under five clinic, OPD, ANC—always check: have parents and/or child been tested for HIV? Same for adults with children at ART, TB, STI visits
Unknown if exposed/symptomatic	At under five clinic, OPD, ANC—have parents and/or child been tested for HIV? Same for adults with children at ART, TB, STI visits Community visits (OVC, HBC)—checked passports of mother? child? referral? IMCI-HIV, Pediatric wards, NRUs, health centers, under five clinics
Known to be exposed/asymptomatic	In the community At postnatal visit Under five clinics
Known to be exposed/symptomatic	Under five clinics—IMCI-HIV in facility or in community detection Pediatric wards, NRUs HBC, OVC other community worker visit
Known to be infected/asymptomatic	Under five clinic Postnatal: visit HBC, OVC other community worker visit
Known to be infected/symptomatic	Under five clinics—IMCI-HIV in facility or in community detection OPD, under five clinic, paediatric ward, NRU In the community—OVC, HBC program visits

**TABLE 7. Clinical Conditions or Signs of HIV Infection in Child that May Suggest HIV Infection**

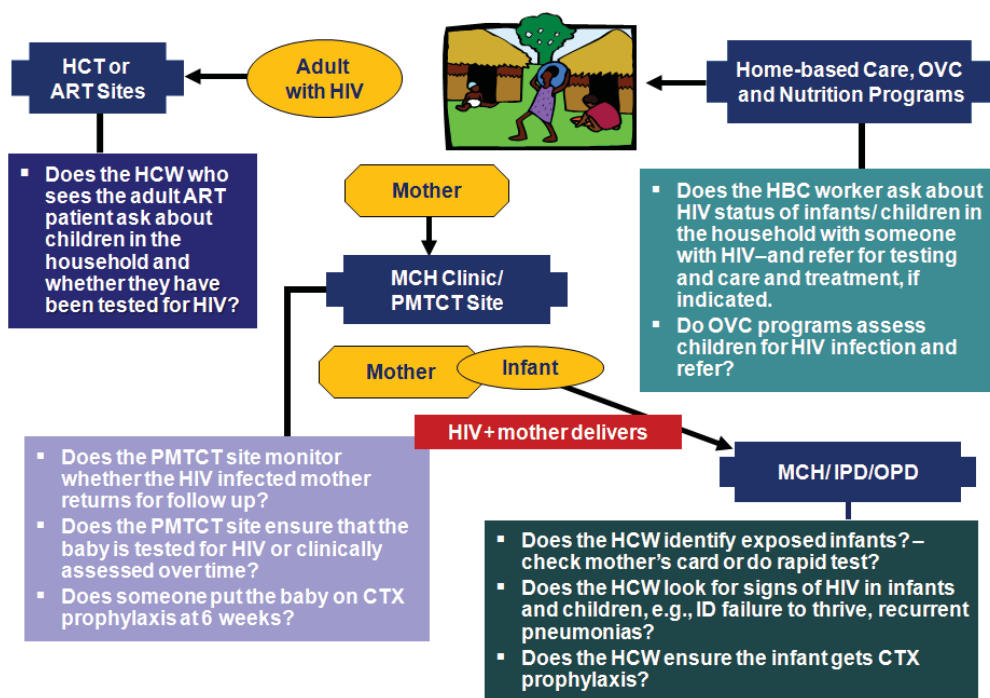
Specificity for HIV infection	Signs, conditions <b>common in HIV infected children but also common</b> in ill uninfected children	Signs, conditions <b>common in HIV infected children and uncommon</b> in uninfected children	Signs/conditions <b>very specific to HIV infection</b>
<b>Signs and conditions</b>	<ul style="list-style-type: none"> <li>• Chronic recurrent ear infections (otitis media) with discharge</li> <li>• Persistent or recurrent diarrhea</li> <li>• Failure to thrive</li> <li>• Tuberculosis</li> </ul>	<ul style="list-style-type: none"> <li>• Severe bacterial infections, particularly if recurrent</li> <li>• Persistent or recurrent oral thrush</li> <li>• Chronic swelling of the parotid gland that is often painless (parotitis)</li> <li>• Generalized persistent non-inguinal lymphadenopathy in two or more sites</li> <li>• Enlargement of the liver and spleen (hepatosplenomegaly)</li> <li>• Persistent or recurrent fever</li> <li>• Neurological dysfunction</li> <li>• Shingles (herpes zoster) on one part of the body or affecting a single dermatome</li> <li>• Skin rash that won't go away and does not respond to treatments that usually work (persistent generalized dermatitis)</li> </ul>	<ul style="list-style-type: none"> <li>• Pneumonia (PCP pneumonia or <i>pneumocystis jiroveci</i>—formerly called <i>carinii</i>) or lymphoid interstitial pneumonitis (LIP)</li> <li>• Thrush in the esophagus (Esophageal candidiasis)</li> <li>• Shingles (herpes zoster with more than one area of the body affected (multidermatomal involvement)</li> <li>• Kaposi's sarcoma</li> </ul>

**Table 8. Program Components and Issues to Scale Up Pediatric HIV Services**

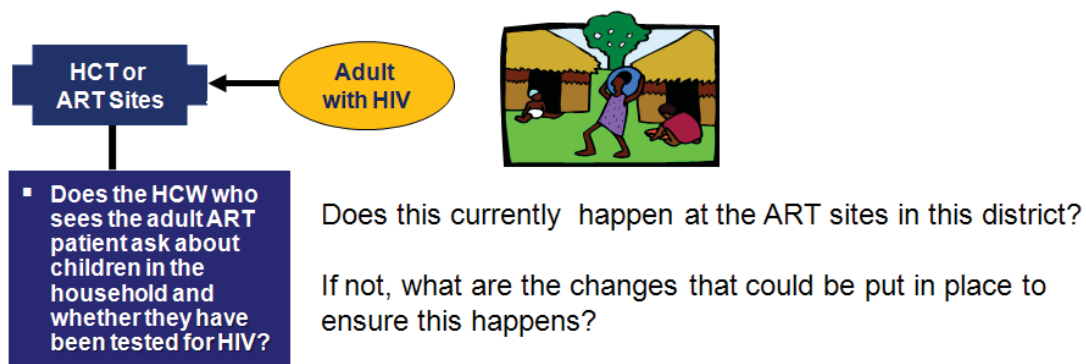
Group	Entry points to care	Testing and Counseling: <ul style="list-style-type: none"> <li>what test is used?</li> <li>who does the testing and counseling?</li> <li>where is the test done</li> </ul>	What is the next step if HIV test is positive?	What is documented and what is the follow-up and referral system?	Special Issues
Newborns up to 18 months					
Over 18 months					
Children in school					
Teens/ adolescents					
Orphans (at each of above ages/stages)					

The next diagram shows all the possible missed opportunities for finding exposed and infected infants and children at different entry points. There are questions that tell us what should be done at each of those entry points to identify those infants and children who need diagnosis, care and treatment.

**Figure 7. Missed Opportunities for Pediatric HIV: Program Checklist**



**Figure 8. Missed Opportunities for PediatricHIV: Program Checklist**



### **ADVANTAGES OF EARLY IDENTIFICATION OF EXPOSED AND INFECTED INFANTS**

Early identification facilitates access to:

- Currently available interventions to reduce morbidity and mortality associated with HIV infection
- Access to needed interventions for other affected family members
- Access to social and emotional support of the child and family
- Appropriate healthcare and social welfare planning at the national, regional, and local levels.

### **RECOGNIZING CHILDREN AT RISK OF HIV INFECTION**

In order to identify as many HIV exposed and infected children as possible and provide them with care and treatment, HCWs should be aware of and refer infants and children who might have been exposed to HIV or who have signs and symptoms suggesting they are infected.

**Table 9. Ensuring Identification and Referral of HIV Exposed and Infected Infants and Children in Host Country**

Description of infant or child	Who would be responsible for ensuring identification and follow up?	What should they do (1) first and as (2) follow-up?
A baby born to a mother with HIV		
A child admitted to a pediatric inpatient ward		
A child being seen in U5 clinic		
Babies and children being treated at Community Therapeutic Centers (CTC)		
A child in a family getting home based care or hospice services		
A sick baby with a mother seen in FP clinic		
The child of an ART patient		

## CLINICAL SIGNS AND SYMPTOMS OF HIV IN CHILDREN

An HIV test is the only best way to definitely diagnose HIV infection in a person. However there are signs and symptoms to look for in an infant or child that indicate the need for a test and for follow up care and treatment if the infant has HIV.

There should not be a situation where every child who gets pneumonia a few times stigmatized as having HIV but infants who fail to grow or have frequent illnesses should also not die because no one was willing to check for HIV.

- Growth failure is one of the key presentations of HIV infection.

The relationship between malnutrition and poor resistance to infections and illnesses (or immunosuppression) has been recognized for a long time.

At least 90% of HIV- infected children experience wasting and nutritional depletion during the course of their illness. There is emerging evidence that nutritional status has direct correlation with the survival of the HIV infected child.

It is important to know what the local guidelines are for IMCI-HIV. In general, it is important to **“think of HIV”** and help the mother and infant learn more about the infant’s status if the following are present:

- Pneumonia and or persistent cough
- Persistent diarrhea
- Ear discharge
- Very low weight for height
- Very low weight for age

Also, think of HIV if examination of the child shows

- oral thrush after eight weeks of age
- enlargement of the glands in the jaw/cheek area (parotid gland)
- persistence of enlarged lymph nodes in many parts of the body

Note developmental signs as well as these may signal a young child has HIV.

- Unable to sit by 6 months of age
- Unable to stand by 12 months
- Unable to say one word by 15 months

Another way to understand better the signs and symptoms in children when they have HIV is illustrated in Table 10.

**TABLE 10. Clinical Conditions or Signs of HIV Infection in Child that May Suggest HIV Infection**

Specificity for HIV infection	Signs, conditions common in HIV infected children but also common in ill uninfected children	Signs, conditions common in HIV infected children and uncommon in uninfected children	Signs/conditions very specific to HIV infection
Signs and conditions	<ul style="list-style-type: none"> <li>• Chronic recurrent ear infections (otitis media) with discharge</li> <li>• Persistent or recurrent diarrhea</li> <li>• Failure to thrive (growth card does not indicate continued growth over a period)</li> <li>• Tuberculosis</li> </ul>	<ul style="list-style-type: none"> <li>• Severe bacterial infections, particularly if recurrent</li> <li>• Persistent or recurrent oral thrush</li> <li>• Chronic swelling of the parotid gland that is often painless (parotitis)</li> <li>• Generalized persistent non-inguinal lymphadenopathy in two or more sites</li> <li>• Enlargement of the liver and spleen (hepatosplenomegaly)</li> <li>• Persistent or recurrent fever</li> <li>• Neurological dysfunction</li> <li>• Shingles (herpes zoster) on one part of the body or affecting a single dermatome</li> <li>• Skin rash that won't go away and does not respond to treatments that usually work (persistent generalized dermatitis)</li> </ul>	<ul style="list-style-type: none"> <li>• Pneumonia (PCP pneumonia or <i>pneumocystis jiroveci</i> – formerly called carinii) or lymphoid interstitial pneumonitis (LIP)</li> <li>• Thrush in the esophagus (Esophageal candidiasis)</li> <li>• Shingles (herpes zoster with more than one area of the body affected (multidermatomal involvement))</li> <li>• Kaposi's sarcoma</li> </ul>

## **THE WHO CLINICAL STAGING SYSTEM**

The WHO clinical staging system for HIV infected children, which should be used as a basis of assessing progression of HIV disease and eligibility for ARV therapy, are highlighted below.

The clinical staging is important because:

- It helps determine the prognosis
- It strengthens the clinical diagnosis when laboratory testing is unavailable or delayed
- It guides the decision about starting ART
- Medical history and physical examination are used to place patients into clinical stages.
- There are four stages. Clinical stage 1 is the least severe and clinical stage 4 is the most severe. For each stage there are specific illnesses, or symptoms, that occur at that stage, which represents a stage of immune deterioration, as measured by the CD4 count of the child.
  - In stage one the child might have few symptoms but the lymph nodes might be swollen.
  - In stage 2, there is likely to be itchy skin rashes with certain characteristics.
  - In stage 3, there are pneumonias, oral thrush, TB, and other conditions.
  - In stage 4 you will see severe wasting, malnutrition, PCP pneumonia, neurological symptoms, and other specific conditions.

The WHO table that lists the specific criteria for each clinical stage can be found in Appendix A.

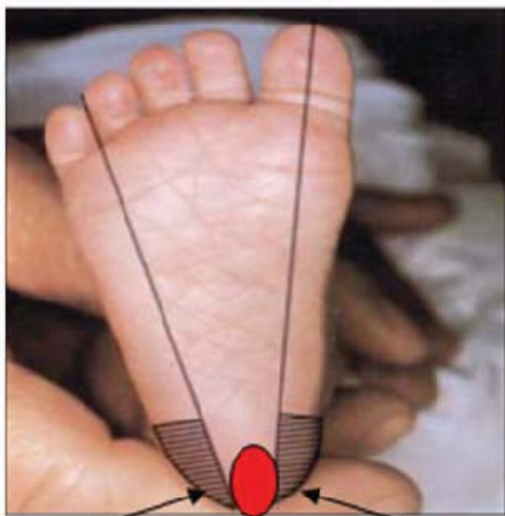


## KEY MESSAGES

- EARLY IDENTIFICATION OF HIV EXPOSED AND INFECTED INFANTS IS ABSOLUTELY CRITICAL SINCE HIV DISEASE PROGRESSES VERY RAPIDLY IN INFANTS WHO ARE INFECTED DURING PREGNANCY, LABOR AND DELIVERY.
  - 30% DIE BY AGE 1 YEAR, AND 50% DIE BY AGE 2 YEARS WITHOUT ACCESS TO ART AND CPT
- MOST OF THE DEATHS IN CHILDREN WHO HAVE HIV CAN BE AVOIDED THROUGH EARLY DIAGNOSIS OF HIV AND TIMELY PROVISION OF EFFECTIVE CARE AND TREATMENT FOR COMMON CHILDHOOD ILLNESSES, OPPORTUNISTIC INFECTIONS AND ANTIRETROVIRAL THERAPY.
- THERE ARE MANY MISSED OPPORTUNITIES TO SAVE THESE CHILDREN BECAUSE THEY LEAVE FACILITIES AND NO ONE KNOWS THEY HAVE HIV.
- THERE ARE MANY ENTRY POINTS WHERE THESE CHILDREN CAN BE IDENTIFIED. THEY CAN ALSO BE PICKED UP BY THOSE DOING WEIGHING, IMMUNIZATIONS, ETC. JUST BY KNOWING HOW HIV PRESENTS IN INFANTS AND CHILDREN. THERE ARE SEVERAL TYPICAL SIGNS AND SYMPTOMS.
- USING SIMPLE TOOLS THAT ALREADY EXIST SUCH AS THE MOTHERS' AND INFANTS' PASSPORTS IS A FIRST STEP—BE SURE THAT HIV STATUS IS RECORDED AND BE SURE TO CHECK THE PASSPORT AT EACH VISIT
- HIV INFECTED CHILDREN TYPICALLY PRESENT WITH GROWTH FAILURE, RECURRENT COUGH OR PNEUMONIA, PERSISTENT DIARRHEA AND DISCHARGING EARS.



# SESSION V



safe

Do not  
puncture  
here

safe

## HIV TESTING IN INFANTS AND CHILDREN

**Time:** 60 minutes

**Activities:** Small group review followed by discussion

**Materials:** PowerPoint presentation or flip charts prepared in advance

### OBJECTIVES:

At the end of this session participants will be able to:

1. Identify the type of HIV tests that are suitable for infants and children at different ages.
2. Identify the steps to take when HIV is suspected in an infant.
3. Discuss host country National Guidelines on HIV testing in children.

## HIV TESTING IN INFANTS AND CHILDREN

It is important to diagnose HIV in infants and children through testing whenever it is possible to do this, rather than relying only on a clinical diagnosis.

Infants will not get the proper care and treatment without a proper diagnosis. There are currently many missed opportunities to ensure that an HIV diagnosis is made in children. The missed opportunities were discussed earlier but we cannot emphasize enough that **health care workers must begin to consider HIV in infants and children much more often than they currently do.**

It is important that HIV testing and counselling be voluntary and the “three C’s”—informed consent, counselling and confidentiality—must be observed.

Providers must

- give individuals sufficient information to make an informed and voluntary decision to be tested
- maintain patient confidentiality
- perform post-test counseling, and
- make referrals to appropriate services.

Testing can occur under several situations.

- **Provider-initiated HIV testing and counselling (PITC)** refers to HIV testing and counselling which is routinely offered by health care providers to persons attending health care facilities as a standard component of medical care. The major purpose of such testing and counselling is to enable specific clinical decisions to be made and/or specific medical services to be offered that would not be possible without knowledge of the person’s HIV status.

In the case of persons presenting to health facilities with symptoms or signs of illness that could be attributable to HIV, it is a basic responsibility of health care provider to routinely offer HIV testing and counselling as part of the patient’s routine clinical management. This includes routinely offering HIV testing and counselling to tuberculosis patients and persons suspected of having tuberculosis.

Provider-initiated HIV testing and counselling also aims to identify unrecognized or unsuspected HIV infection in persons attending health facilities. Health care providers may routinely offer HIV testing and counselling to patients in some settings even if they do not have obvious HIV-related symptoms or signs.

- **Client-initiated HIV testing and counselling (also called Voluntary Counselling and Testing, or VCT)** involves individuals actively seeking HIV testing and counselling at a facility that offers these services. Client-initiated HIV testing and counselling is conducted in a wide variety of settings including health facilities, stand-alone facilities outside health institutions, through mobile services, in community-based settings and even in people’s homes. A Good example is pregnant women, mothers bringing babies with symptoms to Under 5 clinic and women seeking Family Planning services.

## GUIDELINES FOR PEDIATRIC HIV TESTING AND COUNSELING

All health care providers who encounter infants and children should recommend the proper test according to age when an infant is exposed to HIV or when HIV is suspected because of signs or symptoms.

The diagnosis of HIV in HIV-exposed infants and children is an essential part of any national HIV care and treatment strategy.

- *As of November 2007, only 6.8% of all people tested for HIV in the country were between 18 months and 14 years of age.*

The Guidelines for Pediatric HIV testing and Counselling, by country Ministries of Health, are often developed to set standards for HIV testing and counseling for infants and children either presenting for treatment and care in health care institutions or voluntarily seeking HIV testing at NGOs and other institutions licensed to provide HTC.

The guidelines are intended to “foster a supportive HIV/AIDS policy environment that is rightfully the cornerstone of effective HIV programming.”

The following definitions are used in some National PMTCT Guidelines:

**Infant:** any child less than 12 months of age

**Young child:** Any child between the ages of 1-5 years

**School-age child:** Any child between the ages of 6–12 years

**Adolescent:** Any child between the ages of 13–18

**Disclosure:** In the context of pediatric HTC, it is the process of informing a child of his or her HIV status

**Infected child:** A child older than 18 months of age with 1 positive HIV rapid test, or a child less than 18 months of age with a positive PCR.

**Exposed child:** A child born to an HIV-infected mother without confirmed infection or exposed to infected blood products without a confirmed infection. In the event that a mother’s status is unknown, a rapid test in a child less than 18 months of age can confirm HIV exposure.

### **HIV testing and counseling for children is guided by the following five principles:**

- Right to testing and care
- Consent to HIV testing
- Right to age-appropriate HIV counseling
- Right to confidentiality
- Support for disclosure of HIV status

### **RIGHT TO TESTING AND CARE**

All children, irrespective of the status of their health, have a right to be tested for HIV either in a health care setting where diagnostic and routine testing is being offered or in non-health care settings where voluntary HIV testing and counseling is licensed.

All infected children have a right to access HIV care and treatment where ever ART services are offered.

### **CONSENT FOR HIV TESTING**

Children aged 12 years and below need consent for HIV testing from parents or guardians/care giver.

- In the absence of a parent or guardian/care giver, a clinician can give consent to test children age less than 12 years of age for purposes of medical management.
- Any young person 12 years and below who is married, pregnant or engaged in risky behavior should be considered a mature minor and be eligible to give consent for HIV testing and counseling.
- Children aged 13 years or over shall be entitled to access HIV testing and counseling without the consent of a parent or guardian.

## **DISCLOSURE OF HIV STATUS TO CHILDREN**

Disclosure or telling the child that he/she is HIV positive, should be regarded as a process, not an event. Disclosure is a process that should take place as early as possible in an age appropriate manner, beginning in children as young as 6 years of age. A good indicator for starting disclosure process is when a child starts to ask questions about his/her treatment, e.g. “why do I have to take this medicine?”

## **RIGHT TO CONFIDENTIALITY**

Any information related to a patient’s medical condition must be kept confidential. A child’s HIV status can only be shared with that child’s parents or guardian and the medical team caring for that child; With respect to any other medical information pertinent to a child, established confidentiality laws must be adhered to.

## **ROUTINE HIV TESTING AND COUNSELING**

Routine testing means the test is “routinely” offered in certain health care settings. The health provider informs the client first that the HIV test will be a part of their care and will be done unless they choose to opt-out or refuse such a test.

,An example of approach to routine HIV testing and counseling in Malawi is as follows:

### **TESTING CHILDREN 18 MONTHS OF AGE AND UNDER WHEN THE MOTHER IS HIV POSITIVE:**

- Any infant born to an HIV infected mother is considered HIV-exposed and is therefore at high risk for HIV infection.
- The 6 week infant vaccination visit represents an ideal opportunity to screen children for HIV, provide guidance on feeding issues, and clinically stage those with suspected or confirmed infection.
- At 6 weeks of age, all exposed infants must have a clinical evaluation to coincide with the routine first postnatal visit.
- Where DNA PCR is available, exposed infants must be tested with DNA PCR at the 6 week vaccination visit, or as early as possible.
- All newborn infants should receive health passports at birth. The health passport of the newborn should be stamped with a standard government issued stamp which notes the exposure status of the newborn. This stamp also includes information about polio and BCG vaccination status, as these are vaccines given at birth.
- When the exposed infant attends the under-5 clinic for his/her 6- week visit, the clinician should prescribe Cotrimoxazole Preventive Therapy (CPT) and counsel care giver on when to return for follow-up care.

## **CHILDREN BELOW 6 WEEKS OF AGE**

Children presenting for an HIV test before 6 weeks of age should be tested with DNA PCR if available, or at a minimum they should receive a rapid HIV test and have a clinical evaluation. No child should be turned away from HIV testing due to young age.

### ***When Should a Child Who Tests Negative for HIV be Retested?***

Retesting for HIV infection should be done whenever new HIV exposure has occurred. This includes:

- Babies who are breastfed by an HIV positive individual (infant retested for the HIV virus 6 weeks after complete breastfeeding cessation).

- Illness and failure to thrive- If a child tests negative for HIV and no other cause of illness or failure to thrive is identified in the screening clinic, the child should be referred to a pediatric specialist for further evaluation and possible re-testing.

***When should a child testing positive for HIV be re-tested?***

**False positives**—False positive HIV tests are rare but do sometimes occur. In the case where a clinician suspects a false positive result repeat rapid tests may be performed.

Following are sample cases, the recommended test, issues and follow-up and other action and comments related to that case.

**CASE A**

- Case: 12 week old infant born to mother with HIV
- **Recommended test and specifics**
  - Virological test at 4–6 weeks (PCR)
- **Issue**
  - Rapid tests only detect antibodies and infant still has mother’s antibodies in the blood
- **Follow-up and other actions**
  - If positive, start on ART
  - Recommend testing of other family members
- **Comment**
  - If virological testing not available and the infant has symptoms and signs of HIV, treat as if infected.

**CASE B**

- **Case:** Infant or child suspected of having TB
- **Recommended test and specifics:**
  - Offer HIV test appropriate for age
- **Issue:**
  - Even though the child is seen for TB, a provider must think of HIV since the two diseases co-exist.
- **Follow-up and other actions:**
  - Ensure result is provided to mother or father or caregiver
- **Comment**
  - HIV antibody testing from 9–12 months of age if positive usually suggests child is infected.

**CASE C**

- **Case:** HIV exposed child with negative antibody test who is still being breastfed.
- **Recommended test and specifics:**

- Rapid test unless virological test available. Infant must be off of breast milk for at least six weeks before testing.
- **Issue:**
  - HIV is transmitted through breast milk. If the infant has breastfed within six weeks or less in the period before the test is performed the infant might have been infected through breast milk but has not yet produced antibodies. The virological test is likely to be positive but the antibody test will be falsely negative because the infant has not yet formed antibodies to HIV at the time of testing.
- **Follow-up and other actions:**
  - Provide infant feeding counseling to the mother regardless of the test result.
  - Repeat test after six weeks with no breast milk.
- **Comment:**
  - Nutrition is an important component of child health in both HIV negative and HIV positive children, so infant feeding counseling is a critical intervention



## KEY POINTS

- HIV TESTING IN CHILDREN IS THE KEY TO THEIR GETTING THE CARE AND TREATMENT THEY NEED.
- THE PRINCIPLES OF HIV TESTING IN ADULTS APPLY TO TESTING IN CHILDREN: IT IS IMPORTANT THAT HIV TESTING AND COUNSELLING BE VOLUNTARY AND THE “THREE C’S”—INFORMED CONSENT, COUNSELLING AND CONFIDENTIALITY—MUST BE OBSERVED.
- PROVIDER INITIATED TESTING OR THE ROUTINE OFFER OF TESTING TO ALL EXPOSED INFANTS AND CHILDREN IS A CRITICAL INTERVENTION.
- ALL HEALTH PROVIDERS WHO ENCOUNTER INFANTS AND CHILDREN SHOULD RECOMMEND THE PROPER TEST ACCORDING TO AGE WHEN AN INFANT IS EXPOSED TO HIV OR WHEN HIV IS SUSPECTED BECAUSE OF SIGNS OR SYMPTOMS.
- WHERE DNA PCR IS AVAILABLE, EXPOSED INFANTS MUST BE TESTED WITH DNA PCR AT THE 6 WEEK VACCINATION VISIT, OR AS EARLY AS POSSIBLE

# SESSION VI



## COMPREHENSIVE CONTINUUM OF CARE FOR HIV-EXPOSED AND HIV-INFECTED INFANTS AND CHILDREN

### BASIC CARE PACKAGE, COTRIMOXAZOLE PREVENTIVE THERAPY (CPT) AND ART FOR INFANTS AND CHILDREN WITH HIV

**Time:** 2 hours

**Activities:** Presentation, demonstration, case studies

**Materials:** PowerPoint presentation

**Handout:** Case studies  
Sample CPT and ART forms  
Role play instructions

### OBJECTIVES:

At the end of this session participants will be better prepared to:

1. Describe the guiding principles of a national program to provide comprehensive care for HIV exposed and infected children.
2. Identify and discuss the implementation of the components of comprehensive child health, and the specifics of care and treatment for exposed and infected infants and children, including the basic care package, CPT and ART.

3. Discuss the use, benefits, and monitoring of cotrimoxazole preventive therapy (CPT) in exposed and infected infants and children and the guidelines for initiation and maintenance of CPT.
4. Describe the current status of pediatric ART in your country, the standard regimen and guidelines and principles of managing ART in infants and children.
5. Discuss pain management in children.
6. Describe the psychological, social, and spiritual aspects of comprehensive care for infants and children with HIV.

## **ESSENTIAL GUIDING PRINCIPLES FOR HIV CARE AND TREATMENT FOR CHILDREN**

Programs for children who have HIV work best when they keep the focus on what the child and his/her family need. There are several principles that should guide our efforts in our work and the country's efforts to help children with HIV.

- **Urgency.** HIV prevention, diagnosis, care and treatment must be immediately scaled up to avert hundreds of thousands of deaths among children who are HIV exposed or infected.
- **Universal access.** All children in need should have access to HIV prevention, diagnosis, care and treatment services.
- **Life-long care.** HIV disease is a chronic disease and requires ongoing care and treatment; national governments have a responsibility to ensure uninterrupted care and treatment.
- **Family-centered care.** Family members should receive care in a manner that recognizes and responds to the family as a unit.
- **High-quality care.** Care provided should be of the highest quality possible and should be monitored and improved through a system of improvement.

Adapted from *Pediatric HIV Programming Guide, MAY 2008, WHO, UNICEF*

The needs of infants and children who are HIV exposed or HIV infected include the needs of all children, including management of common childhood illness, support for growth and development, and immunizations, among other elements. Following are lists of key components for medical and nursing care of children with HIV, newborn infants, prevention of transmission, and details of care for exposed and infected children.

## **THE BASIC CHILDCARE PACKAGE**

### **THE NEWBORN**

Most deaths of newborns and mothers occur within the first hours or days after delivery (WHO 2004). In the first four weeks of a neonate's life, although HIV infection in the mother will impact the health of the baby, *practically all neonatal deaths in this period are due to non-HIV causes*. There is a need to address the quality of basic maternal and newborn care with which PMTCT programs need to link.

#### **Newborn care interventions include:**

- skilled care at birth;
- thermal care or warming;
- hygienic cord care;
- extra care for low-birth-weight or premature infants:

- early initiation of exclusive breastfeeding (ideally within the first hour) with skin to skin contact; and
- early postnatal visit (optimally within the first 48 hours).

## **THE INFANT AND YOUNG CHILD**

Interventions described below follow High Impact Interventions described through the Accelerated Child Survival and Development Strategy in Malawi (follow host country guideline on infant and young child feeding).

### **Infant and Young Child interventions include:**

- exclusive breastfeeding up to 6 months of age
- safe complementary feeding from 6 months of age
- good maternal nutrition
- complete and timely immunization: BCG, hepatitis B, DPT (diphtheria, pertussis, tetanus), oral polio vaccine, measles and *Haemophilus influenzae* type B
- vitamin A supplementation
- regular growth monitoring and developmental assessment
- improved water, sanitation and hygiene; and
- insecticide-treated bed nets
- oral rehydration therapy for diarrhea
- prompt care-seeking
- zinc to reduce diarrhea and pneumonia deaths
- prompt antibiotic treatment for pneumonia and dysentery
- prompt antimalarial treatment
- management of severe malnutrition
- palliative care for child

## BOX 1. IMMUNIZATIONS IN HIV-INFECTED CHILDREN

### CHILDREN WHO ARE HIV-INFECTED

- ARE **MORE LIKELY** TO EXPERIENCE PROGRESSIVE PRIMARY TB DISEASE AFTER EXPOSURE TO TB. THE CLINICIAN SHOULD GIVE **BCG AT BIRTH** TO CHILDREN BECAUSE TUBERCULOSIS IS ENDEMIC.
- EXPERIENCE MORE FREQUENT EPISODES OF HAEMOPHILUS INFLUENZA TYPE B INFECTION. BOTH THE CONJUGATE HAEMOPHILUS INFLUENZA AND PNEUMOCOCCAL VACCINES ARE EFFECTIVE, EVEN IN HIV-POSITIVE CHILDREN, AND ARE RECOMMENDED IN REGIONS WHERE THESE VACCINES ARE AFFORDABLE.

### ADMINISTER CHILDHOOD IMMUNIZATIONS AS RECOMMENDED BY EPI WITH THE FOLLOWING MODIFICATIONS:

- WHEN CONSIDERING BCG VACCINATION AT A LATER AGE (RE-VACCINATION FOR NO SCAR OR MISSED EARLIER VACCINATION), EXCLUDE SYMPTOMATIC HIV INFECTION.
- ALTHOUGH MEASLES VACCINE IS A LIVE VIRUS, GIVE IT EVEN WHEN SYMPTOMS PRESENT, AT 6 AND 9 MONTHS.
- HIV-INFECTED CHILDREN CAN RECEIVE PROPHYLACTIC MEASLES IMMUNOGLOBULIN (0.5 ML/KG, MAXIMUM OF 15 ML) WITHIN 6 DAYS OF EXPOSURE.
- **VARICELLA IMMUNOGLOBULIN (0.15ML/KG)** IS ADVISED WITHIN 3 DAYS OF EXPOSURE IF CHILDREN ARE EXPOSED TO CHICKEN POX

	Vaccine	Asymptomatic HIV Infection	Symptomatic HIV Infection
Infants	BCG	Yes	No
	DPT	Yes	Yes
	Polio	Yes	Yes
	Measles	Yes	Yes
Women of Childbearing Age	Tetanus toxoid	Yes	Yes

## MEDICAL AND NURSING CARE FOR INFANTS AND CHILDREN WITH HIV: KEY COMPONENTS

The key components of medical and nursing care of infants and children with HIV include

- HIV counseling and testing
- Prophylaxis of opportunistic infections (OIs)
- Management of HIV-related illnesses, including OIs
- TB control
- Management of HIV disease
- Palliative care

- Access to HIV-related drugs
- Interventions to reduce parent-to-child transmission
- Clinical HIV care for mothers and infants
- Support systems such as functional laboratories and drug management systems
- Nutritional support
- Health education
- Pediatric HIV programs

## **COTRIMOXAZOLE PREVENTIVE THERAPY (CPT)**

Cotrimoxazole preventive therapy (CPT) in HIV-positive patients:

- reduces risk of PCP pneumonia
- reduces mortality in those who get PCP
- reduces risk of other bacterial infections

CPT has been shown to decrease morbidity and mortality in children by 45%. This also means there is a decrease in hospitalizations of children. Cotrimoxazole prophylaxis is cheap, widely available, and easy to administer.

For details about dosages and dispensing, see Appendix on these topics.

### **Who should get CPT**

CPT should be offered to children (aged 14 years or less) in the following circumstances:

- Any child, aged 6 weeks or above, born to an HIV-positive woman irrespective of whether the woman received antiretroviral therapy in pregnancy
- Any child, 6 weeks or more, who is HIV-positive regardless of symptoms

### **Reasons not to provide CPT**

- Known allergy to cotrimoxazole for adults and children
- First trimester of pregnancy for adult women

### **Duration of CPT**

- In HIV-exposed infants (i.e. children born to HIV-positive women) CPT should be taken until HIV infection can be confidently excluded. At 18 months of age and provided the child has stopped breastfeeding for six weeks, the child should have an HIV test.
- According to country guidelines, e.g. Malaw, HIV positive children should continue CPT for life.
- CPT should be discontinued in the event of severe cutaneous reactions, renal or hepatic toxicity or severe haematological toxicity

## **WHERE SHOULD PATIENTS RECEIVE CPT?**

### **ART Clinics**

- All patients on ART should be started on CPT.

- The administration of CPT should be recorded in the patient master cards under the CPT column and also indicated in the ART Register.

### **All other sites**

- All patients eligible for CPT, but who are not on ART, will receive a CPT card to be kept in their health passport, have the reason for CPT indicated on the card, and be asked to go to the Pharmacy to collect the CPT.
- At the pharmacy, the pharmacist will give the patient a CPT number, based on the last number in the Pharmacy CPT Register, and will indicate in the CPT card in the health passport the CPT number and the number of tins given to the patient with the date
- The pharmacist will enter the date of giving CPT in the CPT register
- The pharmacist will ask the patient to report back in 2 months time to collect another supply of CPT

## **ANTIRETROVIRAL THERAPY**

Antiretrovirals (ARV) is the name given to the type of drugs that act to decrease the damage that the human immunodeficiency virus (HIV) does to the person's immune system. These drugs are not a cure. They help HIV infected individuals by decreasing illnesses and infections due to HIV.

Persons with HIV will need these drugs when their immune systems do not function well any more and there is a high viral load. This is determined through CD4 cell count and viral load measurements.

Where CD4 cell counts and viral load tests are not available, there are clinical stages that are characterized by certain signs and symptoms. Having a CD4 or viral load test to determine the stage of illness is better if it is possible to perform one of these tests.

If the infant or child is ready to start ART, there must be significant effort to ensure the caregiver of the child understands how to administer the drugs and the importance of adherence to the prescribed drug regimen.

It is absolutely critical that these drugs be taken according to instructions without missing any doses. Missed doses lead to the development of resistant viruses, which means viruses that no longer respond to the drugs.

## **BOX 2. ART GUIDELINES FOR CHILDREN CONTINUE TO BE DEVELOPED AND REFINED**

WHO IN APRIL 2008 MET AND REVISED ITS GUIDELINES ABOUT WHEN TO START ART IN INFANTS BASED ON THE FOLLOWING EXPERIENCES:

RECENT STUDIES IN RESOURCE CONSTRAINED SETTINGS CONFIRM THAT HIV DISEASE PROGRESSES **VERY RAPIDLY IN THE FIRST FEW MONTHS OF LIFE AND OFTEN LEADS TO DEATH** IN INFANTS WHO BECOME INFECTED WITH HIV AT OR AROUND DELIVERY

OVER 80% OF INFECTED INFANTS RAPIDLY BECAME ELIGIBLE TO START ANTIRETROVIRAL THERAPY BEFORE 6 MONTHS OF AGE.

IN A RECENT CLINICAL STUDY (RANDOMIZED CONTROL TRIAL) CONDUCTED IN SOUTH AFRICA, INFANTS WITH NO SYMPTOMS OF HIV AND WITH A %CD4 >25 STARTED ANTIRETROVIRAL THERAPY AS SOON AS POSSIBLE AFTER DIAGNOSIS OF HIV. IN THESE INFANTS THERE WAS A **VERY DRAMATIC REDUCTION IN MORTALITY (75%)** COMPARED TO INFANTS WHO WERE STARTED ON TREATMENT BASED ON THE IMMUNOLOGICAL OR CLINICAL CRITERIA AS OUTLINED IN THE CURRENT TREATMENT GUIDELINES.

OTHER RESEARCH AND OBSERVATIONAL DATA ALSO SUGGEST THAT STARTING ANTIRETROVIRAL THERAPY VERY EARLY (BEFORE 6 MONTHS) IN INFANTS WITH HIV DRAMATICALLY REDUCES THE RISK OF DEATH AND DISEASE PROGRESSION.

## **RECOMMENDATIONS ON “WHEN TO START” ART IN INFANTS ( REFER ALSO TO HOST COUNTRY GUIDELINES IF AVAILABLE)**

- In infants **under 12 months** with **confirmed HIV diagnosis (virological test positive)**
  - Start ART in all regardless of clinical disease stage or CD4 count
- In infants **under 12 months—if cannot do a virological test, use WHO presumptive diagnosis of HIV** (see below). **Discontinue ART when a virological test shows the infant does not have HIV.**
  - Start ART
- **Young children 1–4 years old and those over 5 years old**
  - Use clinical and immunological criteria

### **Eligibility for ART in children under the age of 18 months in the absence of virological diagnosis**

For infants and children less than 18 months of age, the diagnosis of HIV infection is difficult because of the presence of maternal antibodies. In most situations, there will be no access to virological testing. In these situations, clinical criteria (shown below) can be used for making the diagnosis of severe HIV disease requiring ART.

A presumptive (without laboratory tests) diagnosis of **severe** HIV disease requiring ART is made if:

- The infant has been confirmed to be HIV antibody positive

*and*

- The infant categorized in WHO paediatric Clinical Stage 4 (this includes severe malnutrition)

or

- The infant has been confirmed to be HIV antibody positive

and

- The infant is symptomatic with two or more of the following conditions:
  - Oral candidiasis
  - Severe pneumonia
  - Severe sepsis

## STANDARDIZED TREATMENT FOR HIV AND AIDS

The first line regimen for both adults and children in some countries is a combination of three drugs:

- Stavudine (d4T) and
- Lamivudine(3TC) and
- Nevirapine(NVP).

This regimen is easy to administer, has few side effects, does not interact significantly with rifampicin and is not too expensive.

### **BOX 3. ART MESSAGES WHICH ALL HEALTH WORKERS SHOULD KNOW AND BE ABLE TO EXPLAIN**

- THE DRUGS ARE NOT A CURE AND HAVE TO BE TAKEN FOR LIFE
- MISSING DOSES CAN CAUSE THE DRUG NOT TO WORK BECAUSE THE VIRUS BECOMES RESISTANT TO THE DRUG.
- GUARDIANS AND CARE GIVERS MUST SUPPORT DRUG ADMINISTRATION FOR CHILDREN.
- DRUGS MUST NOT BE SHARED BY RELATIVES AND FRIENDS
- CONSULT A PHYSICIAN WHEN AN ADVERSE REACTION TO THE DRUGS OCCURS

## PAIN MANAGEMENT

Children with HIV will sometimes have pain related to their infections or conditions. It is important to be sure that infants and children are provided with pain relief. There are key facts you should know about pain in children as well as principles that should guide how you manage their pain.

### **Pain in children:**

There is no evidence that the sensitivity to pain of infants and children is different from that of adults. Despite this, children are often under medicated.

It is recommended that one begin with medications suitable for mild pain, such as paracetamol and advance, as needed to those for more severe pain, such as codeine and then morphine.

### **Selected principles of pain management in children**

1. Prevent pain whenever possible, and treat underlying cause.

2. Use measures other than drugs to help the pain medicines work (massage, comfort, etc.)
3. Intramuscular administration is less desirable than oral, intravenous or rectal routes. Intramuscular injections cause pain, and drug absorption is unpredictable.
4. You must monitor closely the variables of level of consciousness and respiratory status.
5. Morphine remains an effective drug for many children with pain when given in appropriate doses.

*Fear and anxiety and other emotions play a large role in the experience of pain. Taking measures to lessen the impact of these emotions on pain is a key intervention. Infants and children can respond to measures that increase relaxation. Young children can be engaged in play and older children can be counseled.*

Adapted from Health Canada. *A Comprehensive Guide for the Care of Persons with HIV Disease, Module 2.*



## KEY MESSAGES

- THE KEY GUIDING PRINCIPLES FOR CARE OF HIV EXPOSED AND INFECTED INFANTS AND CHILDREN ARE ABOUT **URGENCY, UNIVERSAL ACCESS, LIFE-LONG CARE, FAMILY-CENTERED CARE, AND HIGH QUALITY CARE.**
- HIV EXPOSED OR HIV INFECTED CHILDREN HAVE THE SAME HEALTH CARE NEEDS AS UNINFECTED CHILDREN
- COTRIMOXAZOLE PREVENTIVE THERAPY OR CPT IS AN EXTREMELY EFFECTIVE WAY TO PREVENT OPPORTUNISTIC INFECTIONS IN INFANTS AND CHILDREN AND ALL INFANTS WHO ARE EXPOSED, EVEN BEFORE WE KNOW IF THEY ARE INFECTED, SHOULD BE RECEIVING CPT STARTING AT SIX WEEKS.
- IT IS NOW RECOMMENDED THAT ALL INFECTED INFANTS BE STARTED ON ART AS SOON AS POSSIBLE. UNLIKE ADULTS, THERE IS NO NEED TO WAIT TO CHECK A CD4 COUNT OR TO SEE A CONSTELLATION OF SYMPTOMS BEFORE STARTING.
- FAMILIES OF CHILDREN WITH HIV HAVE A SPECIAL NEED FOR PSYCHOSOCIAL SUPPORT
- PAIN MANAGEMENT IS AN IMPORTANT PART OF COMPREHENSIVE CARE OF INFANTS AND CHILDREN WITH HIV



# SESSION VII



## OPTIMAL INFANT FEEDING PRACTICES AND YOUNG CHILD NUTRITION IN THE CONTEXT OF HIV

**Time:** 90 minutes

**Learning activities:** Presentation, discussion, role plays

**Materials:** PowerPoint presentation or flip charts prepared in advance

Handout:

### OBJECTIVES

By the end of the session participants will better prepared to:

1. Discuss optimal infant feeding practices, common infant feeding practices and nutritional factors.
2. Describe the importance and use of growth monitoring and important factors in feeding infants and children during illness.
3. Discuss approaches to ensure good nutrition and minimum risk of HIV transmission during breastfeeding, including listing criteria of AFASS for decision making on infant feeding options.
4. Identify the current recommendations for infant feeding options for mothers with known HIV status and how to proceed when infant's HIV status is known and unknown.
5. Discuss counseling and communications approaches to maximize assistance to mothers with HIV and ensure safe infant feeding for their infants.
6. Identify the special nutritional needs of infants with HIV.

## INFANT FEEDING PRACTICES: EXPERIENCE FROM MALAWI

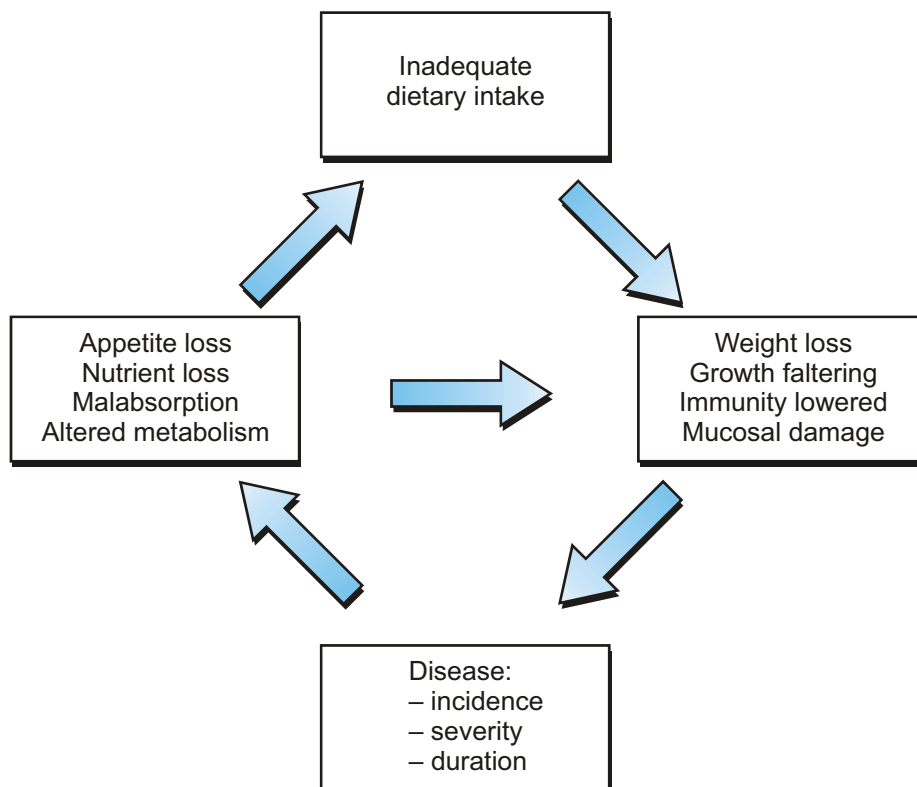
Even though breastfeeding is practiced by almost all mothers (97%) , exclusive breastfeeding (EBF) for the first six months of life is practiced by only 53% of mothers. Although most mothers breastfeed for almost 2 years, infants are not given timely, appropriate or adequate nutrient rich and energy-dense foods to complement breast milk from age 6 months to 24 months older.

Malnutrition levels are therefore still high: 48% of children under the age of five years are stunted, 22% are underweight, and 5% present with wasting. Poor feeding practices contribute substantially to child malnutrition along with food insecurity, and poor sanitation and health care.

### MALNUTRITION

- Is the underlying major contributory cause of child morbidity and mortality
- Malnutrition commonly occurs between 6 -24 months of age
- Major childhood nutrition problems include:
  - inadequate weight and height
  - intra-uterine growth retardation from maternal malnutrition
  - low birth weight from maternal malnutrition
  - micro nutrient deficiencies from maternal malnutrition and poor complementary feeding practices
  - HIV infection from MTCT. Malnutrition is due to opportunistic infections such as oral thrush, recurrent and chronic Infections, such as ARI, TB, and chronic diarrhea.

Figure 9. Vicious Cycle of Malnutrition



## CONSEQUENCES OF GENERALIZED MALNUTRITION AMONG CHILDREN

- Frequent preventable infections such as diarrhea, ARI, pneumonia predispose the children to early malnutrition, high morbidity and mortality from preventable childhood illnesses
- Low IQ affecting educational ability
- Low productivity in school and later in adult age
- High maternal obstetrical risks for women of child bearing age.

## INDICATORS FOR NUTRITION STATUS OF UNDER FIVE CHILDREN OF AGE

- **Prematurity/low birth weight**—13%
  - These are a reflection of maternal malnutrition.
- **Stunting**—49%

This is the height for age. It indicates chronic malnutrition resulting from inadequate intake of food over a long period of time. This may be exacerbated by chronic illness.
- **Wasting** (Weight for age)— 5–6%

This is weight for age. This is a result of acute malnutrition resulting from starvation. Failure to receive adequate nutrition and may be affected by acute illness especially diarrhea.
- **Underweight** (Weight for age)—25%

This condition can result from either chronic or acute malnutrition or a combination of both.

For example, 25% of children are under weight in Malawi.

In order to target infant feeding problems and avoid the problems with nutritional status outlined above, it is first important to understand and be able to help mothers to understand what is “optimal infant feeding practice.”

Appropriate infant feeding practices is key for early child’s growth development, psychosocial and intellectual well being of the children.

## OPTIMAL INFANT FEEDING PRACTICE

Exclusive breastfeeding for the first 6 months of infants life and continued breastfeeding up to years and beyond with timely introduction to quality complementary feeding is crucial and sets the foundation for infant and

## BABY FRIENDLY HOSPITAL INITIATIVE (BFHI) STRATEGY

The BFHI has 10 steps to be followed to make breast feeding successful by initiating these steps in health facilities and continuing in the community.

## BENEFITS OF BREASTFEEDING

### Why exclusive breastfeeding?

It is the only food and water that the baby needs in the first 6 months.

### Why?

#### **Colostrum:**

- Chief defense against infection

- High in protein
- First immunization
- Expels meconium (baby's first stool)
- Prevents jaundice

### ***Breast milk***

- Supplies all necessary nutrients in proper proportion
- Digests easily, no constipation
- Protects against diarrhea, ARI, pneumonia
- Provides antibodies to illnesses
- During illness, helps keep baby well-hydrated
- Reduces the risks of allergies
- Always ready at the right temperature
- Increases mental development

### ***If breastfeeding with early skin to skin contact***

- Stabilizes temperature, prevents hypothermia (cold)
- Promotes bonding

### ***In the mother***

- Reduces blood loss after birth (early/immediate breastfeeding)
- Delays return of fertility
- Reduces the risk of breast and ovarian cancer
- Available 24 hours a day
- Delays new pregnancy

### ***For the Family***

- Economical
- Accessible
- No preparation needed
- Reduces costs for medicines for sick baby

## **EXCLUSIVE BREASTFEEDING FOR THE FIRST 6 MONTHS OF BABY'S LIFE**

Exclusive breastfeeding means feeding the baby on breast milk only from soon after birth till the baby is 6 months of age.

Exclusive breastfeeding means that the baby should not be given any of the following

- No water, gripe water, laxatives traditional drinks, no other forms of milk such as formula
- No thin porridge (dawale or phala) or any food is given to the baby except breast milk unless in special situations when health workers may prescribe some medications.

Any of the following will interfere with exclusive breastfeeding:

- Giving baby any drinks or foods other than breast milk.
- Mixing other liquids or food replaces the health and nutritional benefits of breast milk to the baby and exposes the infant to diarrhea and other infections that cause death in babies.
- Giving babies teats or pacifiers causes nipple confusion which will make babies to stop breastfeeding. Teats and pacifiers also introduce infections to the babies.
- There should be no bottle feeding. Expressed breast milk should not be put in the bottle to feed the baby. Always use an open cup.

It is important that health providers and community workers help and support mothers to:

- Initiate breastfeeding within half an hour of birth
- Correctly position and attach the baby to the breast
- There should be no limits placed on the number of breastfeeds
- Provide frequent and demand feeding day and night at least 2 hourly.
  - Newborn babies should breastfeed eight to 12 times in 24 hours, including night feeds
- Give regular skin to skin contact with the baby at least for one month whether breastfeeding or not
- Increase breast milk supply
  - Express and store breast milk and provide open cup feeding with expressed breast milk if the baby is not able to suckle. There should be no limits placed on length of a breastfeed or suckling time.

They should also support and counsel mothers to:

- Timely introduce complementary feeding at 6 months of infant's age.
- Follow-complementary feeding principles according to infant's age
- Frequency of feeding, quantity and density; diversification of feeds and active feeding
- Micronutrient supplementation (Vitamin A) as per schedule
- Integrate other nutrition and health promotion activities such as
- De-worming
- Promotion of the use of iodated salt
- Use of treated bed nets
- Use of safe water (boiled or chlorinated)
- Weigh all children under 24 months every month
- Weigh children aged 25–60 months every 3 months

## **DANGERS OF MIXED FEEDING**

Mixed feeding means giving breast milk and other feed other feeds.

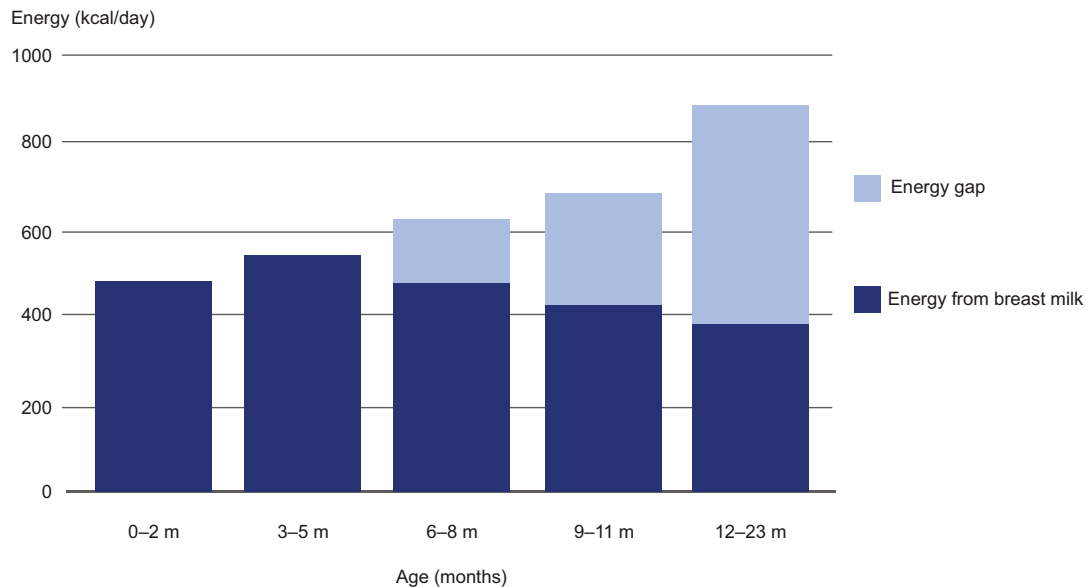
Mixed feeding is harmful because it

- reduces breast milk intake
- may harm the lining of the infant’s intestines, and unnecessarily exposes the child to pathogens (that can exploit the infant’s compromised intestinal lining).
- increases the risk of HIV infection through breastfeeding
- increases risks of common child hood illness and death from frequent attacks of diarrhea, acute respiratory infections and pneumonia.

### OPTIMAL COMPLEMENTARY FEEDING PRACTICES

- Breast milk alone, exclusive breastfeeding should continue for the first 6 months.
- At 6 months of age, breast milk alone is not sufficient to meet the nutritional requirements of an infant to support good growth, development and survival.
- From 6–12 months, breastfeeding continues to provide half or more of the child’s nutritional needs
- From 12–24 months, at least one-third of their nutritional needs.
- Breastfeeding continues to provide protection from many illnesses for the child and provides closeness and contact that helps psychological development.
- Breastfeeding for two years or longer helps a child to develop

**Figure 10. Energy Required by Age and the Amount Supplied from Breastmilk**



### FEEDING OF THE SICK CHILD DURING ILLNESS AND RECOVERY

Good feeding is critical for catch-up growth. In order to help the child catch up:

- Give extra breastfeeds
- Feed extra meal
- Give extra amount

- Use extra rich foods
- Feed with extra patience
- Give extra foods until the child has regained lost weight and is growing well again.

#### **BOX 4. FEEDING OF THE SICK CHILD DURING ILLNESS AND RECOVERY**

GOOD FEEDING IS CRITICAL FOR CATCH-UP GROWTH. IN ORDER TO HELP THE CHILD CATCH UP:

- GIVE **EXTRA** BREASTFEEDS
- FEED **EXTRA** MEAL
- GIVE **EXTRA** AMOUNT
- USE **EXTRA** RICH FOODS
- FEED WITH **EXTRA** PATIENCE. GIVE EXTRA FOODS UNTIL THE CHILD HAS REGAINED LOST WEIGHT AND IS GROWING WELL AGAIN.

#### **MOTHERS WITH HIV**

Women who test HIV positive should receive initial and ongoing supportive counseling from trained personnel either in health facilities or in communities with support groups.

**Goal:** to provide the best nutrition possible and to prevent HIV infection from passing to the baby through breastfeeding after the baby is born.

When considering replacement feeding, one must first assess whether this will meet AFASS criteria. AFASS means the option to breastfeeding is

- **A – acceptable:** The mother does not see any barrier to choosing replacement feeding for cultural or social reasons or for fear of stigma or discrimination,
- **F – feasible:** The mother or care giver has adequate time, knowledge, skills, resources and support to correctly prepare breast-milk substitutes and feed the infant 8-12 times in 24 hours
- **A – affordable:** The mother or care giver, with available community and/ or health support, can pay for the costs associated with procurement, preparations, storage and use replacement feeds without compromising the health and nutrition for the family. Costs include those for acquiring ingredients,
- **S – sustainable:** Availability of a continuous, uninterrupted supply and a dependable system of distribution of all ingredients and products needed to safely practice replacement feeding at least one year and
- **S – safe:** Replacement foods are correctly and hygienically stored, prepared and feed with clean hands, cups and other utensils but not bottles or teats

#### **Ministry of Health Guideline for infant feeding in the context of HIV**

- Mothers who are HIV positive should be given adequate information on the possible risk of HIV transmission to the child through breastfeeding, and should be assisted to make an informed choice on how to feed the child.
- The most appropriate infant feeding option for a mother who is HIV positive depends on her individual circumstances, her health status and the local situation. It also depends on the availability

and access to health care and support services. The following recommendations, however, should be followed to guide the technical advice and support given to the mothers and other caregivers:

- Exclusive breastfeeding is recommended for the HIV-exposed infants for the first 6 months of their life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS) for them and their infants before that time. Exclusive breast feeding means feeding the child breast milk only with no other foods or fluids, not even water during the first six months of the child's life.
- 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 appropriate 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.
- Breastfeeding mothers of infants and young children who are known to be HIV-infected should be strongly encouraged to continue breastfeeding.
- Whatever the feeding decision, service providers should follow-up all HIV-exposed infants, their mothers or caregiver, and continue to offer infant feeding counseling and support at every contact point within the health service delivery system.
- All mothers that are HIV negative or those who do not know their HIV status, should exclusively breastfeed for the first six months and continue breastfeeding with appropriate complementary feeding from six months until the child is two years or beyond.

### **Breastfeeding cessation**

- **Cessation is recommended as soon as replacement feeding is acceptable, feasible, affordable, sustainable and safety (AFASS)**
- If AFASS is met at 6 months, breastfeeding can cease using the transitioning process for a period of 2-4 weeks.
- Abrupt breastfeeding cessation is not recommended.
- If AFASS is not met, breast feeding should continue with introduction to complementary feeds.
- After 6 months of exclusive breastfeeding, the infants' gut is mature enough to digest the food without being eroded and hence there is no risk of mixed feeding. The risk of MTCT is greatly reduced by the mature gut
- The Code of Marketing Infant and Young Child Foods should be adhered to in order to prevent spill over among the HIV negative women and those of unknown HIV status.
- All children aged 6-59 months receive vitamin A supplementation according to EPI schedule.
- Growth monitoring and health promotional activities are provided at all levels as a preventive strategy aimed at taking specific action to avert poor physical and psychosocial development of the child.
- The multimix principle based on the six food groups is promoted by all stakeholders for infants and child diets.

### **Infant feeding options**

All counseling on infant feeding options should be referred to the infant feeding counselors or mother support counselors or a HCW who has learned about breastfeeding.

Once a decision on the option has been made mothers should be supported to implement the choice all the way. It is important that family members are involved in decision making for support

### **Exclusive Breastfeeding for the first 6 months of life**

Exclusive breastfeeding has already been discussed under optimal breastfeeding practices, Exclusive breastfeeding means that the baby is fed on breast milk only from birth to 6 months unless medically indicated.

### **How to safely breastfeed**

Mothers who choose this method:

- Should Initiate breastfeeding within 30 minutes of birth
- Should practice exclusive breastfeeding
- Correct positioning and attachment to the breast can prevent breast problems.
- If has breast problem, feed on unaffected breast/express and heat treat the expressed milk to feed the infant.
- If mother has breast conditions or infant has oral lesions or diarrhea, give expressed heat treated breast milk using an open cup to maintain exclusive breast milk feeding. Breastfeeding should resume when the conditions are back to normal
- Early treatment of breast problems cracked/sore nipples etc
- Mother should have extra meals and foods rich in Vitamin A
- When AFASS conditions are met at 6 months, should stop breastfeeding.
- Attend monthly mother infant pair follow-up for her own health, infant feeding counseling, growth monitoring and immunization, infant's health appraisal, cotrimoxazole prophylaxis or and early infant diagnosis.
- Mixed feeding in the first 6 months increases the risk of MTCT greatly because the infants' gut is immature and is easily eroded with non-breast milk feeds
- Encourage HIV disclosure to the family for support of her decision to exclusively breastfeed.
- Attend for regular HIV disease monitoring and ensure continuation of cotrimoxazole prophylaxis, good nutrition and ART when needed
- Use condom for safe sex and prevention of re-infections

**Table 11. Key Risk Factors that Increase Mother to Child Transmission**

Maternal	Infant
<ul style="list-style-type: none"> <li>• HIV status/ Immune status—high viral load</li> <li>• Recent HIV infection</li> <li>• Severity of HIV infection (Advanced HIV/AIDS)</li> <li>• No ARV Treatment</li> <li>• ARV prophylaxis provided during labor and to the infant shortly after birth does not provide long- term protection for the infant who is breastfeeding</li> <li>• STI infection</li> <li>• Breast conditions</li> <li>• (Cracked/sore nipples, breast engorgement mastitis breast abscess breast thrust)</li> <li>• Poor maternal Nutrition (vitamin A deficiency, iron deficiency)</li> <li>• Malaria infection</li> <li>• Social cultural factors</li> </ul>	<ul style="list-style-type: none"> <li>• Duration of breastfeeding</li> <li>• Mixed feeding i.e. exclusive breastfeeding.</li> <li>• Lesions in infants mouth oral thrust and intestines.</li> <li>• Prematurity/low birth weight</li> </ul>

## REPLACEMENT FEEDING OR FEEDING

- Replacement feeding is the feeding of infants who are receiving no breast milk with a diet that provides the nutrients that the infant needs until the age at which he or she can feed on family foods.
- This option completely eliminates the risk of MTCT through breastfeeding, however; it deprives the child and mother of the benefits of breastfeeding. Replacement feeding also lacks other nutritional factors found in breast milk that have been linked with optimal growth and development.
- Commercial infant formula is the recommended replacement feeding option when AFASS conditions are met. The formula is already modified to suit the physiological needs of the child. Commercial infant formula is fortified with vitamins and minerals that the baby requires; however, it is costly.
- An infant fed from birth to 6 months should consume approximately 40 tins of commercial formula weighing 500g each (or 50 tins weighing 400g each). Mothers should cost this and check if they have resources for this.

### Advantages

- No risk of HIV infection
- Family members may help

### Disadvantages

- Contamination
- May be out of stock
- Risk of diseases and malnutrition if not prepared correctly
- Need to have clean water and soap to wash utensils
- No antibodies to protect the infant

- No protection against pregnancy
- Time consuming
- Expensive. MK 6,000–8,000 per month for 6 months. (1,120–1,400 per tin (minimum))
  - Commercial formula = 20 kg (40 tins x 500g)
- Risk of stigmatization
- Milk is still needed when a baby has complementary feeds

## COMPLEMENTARY FEEDING

- Breast milk and other forms of milk are essential up to 2 years or more; however, after six months of age, milk alone is not adequate to meet the baby’s nutritional needs.
- From 6 months of age, the child should be given a variety of complementary foods in addition to breast feeding.
- Discuss the **FADUA (Feeding Frequency, Amount, Density, Utilization and Active feeding)** with the mother. This applies to all infants regardless of their HIV status and feeding method.
- The foods should be given to the child at the recommended
  - frequency (F),
  - in adequate amount (A) and
  - density (D) to meet the body’s nutrient requirements.
  - The food should also be in the right form and consistency to facilitate proper digestion and to ensure proper utilization (U) of the nutrients in the body. T
  - he mother or other care givers should sit with the child and help him/her to eat adequately (Active feeding, (A)).
- Milk continues to be an important component of young child’s diet. Therefore infants who stop breastfeeding any time after 6 months, other forms of milk to replace breast milk (250–500 ml per day according to the age of the baby) should be given to the infant
- The infant on formula feeds should continue to receive milk in addition to complementary feeds.

## MOTHER-INFANT PAIR FOLLOW-UP

Health workers need to follow-up mother-infant pairs or care givers from birth to 2 years or when the HIV status of the child has been established. Follow up helps to determine and decide on the course of action for care, nutrition counseling, growth monitoring and promotion, immunization, early identification of HIV infection and prevention of other infections. During each visit, assess both mother and infant or care givers on

- Sustaining the infant feeding of choice: breastfeeding or replacement feeding
- Ensure on going supply of cotrimoxazole prophylaxis for the baby
- AFASS for breastfeeding cessation at or after 6 months
- Timely introduction of complementary feeding at 6 months,
- Continuous assessment of AFASS for breastfeeding cessation after 6 months of exclusive breastfeeding

- Maternal general health status including general wellbeing and weight loss, ability to care for the baby, breastfeeding management skills and related problems and HIV disclosure to significant others. If a mother develops AIDS, counsel for alternative to breastfeeding
- Infant/child's health including possible signs of HIV infections such as oral thrush, persistent diarrhea, failure to thrive, present or past ear discharge, enlarged lymph nodes and recurrent pneumonia
- Infants with possible HIV infections should be referred to pediatric HIV clinic for consultations while continuing to breastfeed before decision on early breastfeeding cessation is made. *The infant feeding counselor should work hand in hand with the ART and pediatric HIV clinics.*

# SESSION VIII



## FOLLOW-UP AND REFERRAL OF MOTHERS AND INFANTS

**Time:** 1.5 hours or 90 minutes

**Activities:** Presentation, group exercises

**Materials:** PowerPoint presentation or flip charts prepared in advance

Handout:

### OBJECTIVES:

At the end of this session participants will be able to:

1. Discuss the importance of follow-up of HIV positive women, their exposed infants, and HIV positive children.
2. Identify follow-up mechanisms at health facility and community levels and discuss advantages and disadvantages of different approaches.
3. Describe ways to improve approaches to mother-infant pair follow up.
4. Discuss the referral process and making sense of the referral of patients between various sites in a hospital and the counseling unit and the factors which influence this process.
5. Clarify what is necessary for effective follow-up and referral to meet the needs of mothers and infants.

## INTRODUCTION

- Follow-up and referral are essential elements in the management of HIV exposed infants, infected infants and children and their mothers
- Follow up ensures continuity of care and referral is often the only way of ensuring that mothers and children access the services they need.
- Referrals are often necessary both within a facility and between the facility and other facilities or the community or other agencies.

## REFERRALS ARE MADE WHEN...

- The client has unmet needs
- Services are unavailable or inaccessible at the facility
- The client requests the referral

Functioning referral networks require that health workers be fully versed with the range of services provided at the facility and beyond. List all possible resources and create a directory of these services and create a directory of these services.

## THE REFERRAL PROCESS

The referral process should include:

- Assessment of client's needs
  - Clients have individual care, treatment and support needs based on the status of their situation and circumstances
- **Documentation** of the referral, including date, to whom the client was referred and any information provided to facilitate the referral
- Issues of **confidentiality and privacy** should be made clear to the client as well as staff and partner organization
- Feedback should be two-way

**Table 12. Managing Mothers and Infants for Prevention, Care and Treatment of HIV in Infants**

Client Description	Services that should be provided
HIV Positive mother during antenatal period	<ul style="list-style-type: none"> <li>• Provide ANC services</li> <li>• Counselling and testing for HIV</li> <li>• Provide ARV prophylaxis for mother and baby</li> <li>• Begin cotrimoxazole prophylaxis</li> <li>• Assess clinically and order lab work to determine HIV disease stage and need for ART.</li> <li>• Counsel to deliver at a health facility</li> <li>• Counsel about safe infant feeding</li> <li>• Discuss postnatal visit</li> <li>• Counsel about family planning</li> <li>• Assess for and treat opportunistic infections and STIs</li> <li>• Counsel regarding HIV, stress, etc.</li> <li>• Referral for legal, economic, psychological or other social services as needed</li> <li>• Provide information, encouragement regarding participation in support groups (including mother to mother groups) that promote proper diet exercise and other steps to promote wellness</li> </ul>
	<ul style="list-style-type: none"> <li>• Assess ART clinical eligibility</li> <li>• Order, get results and discuss results of lab tests</li> <li>• Provide ARVs</li> <li>• Conduct adherence sessions</li> <li>• Monitor use</li> <li>• Referral for legal, economic, psychological or other social services as needed</li> </ul>
HIV positive mother and infant post partum	<ul style="list-style-type: none"> <li>• Immediate newborn care and support for breastfeeding initiation</li> <li>• First visit at ? hours</li> <li>• Immunizations for the baby</li> <li>• Infant feeding counseling</li> <li>• Plan for infant HIV test and CPT</li> <li>• Counsel mother to seek immediate care for infant illnesses</li> <li>• Remind mother about infant ARV prophylaxis and be sure she has proper drug(s)</li> <li>• Referral for legal, economic, psychological or other social services as needed</li> </ul>

Client Description	Services that should be provided
HIV positive infant	<ul style="list-style-type: none"> <li>• Weight, growth and development assessment</li> <li>• CPT initiation at 4-6 weeks</li> <li>• Management of common illnesses</li> <li>• Immunizations</li> <li>• Clinical assessment for HIV</li> <li>• HIV virological test as soon as possible</li> <li>• If no virological test possible, rapid antibody test when finished breastfeeding for six weeks</li> <li>• Infant feeding assessment and counseling</li> <li>• Counsel mother and/or caregiver</li> <li>• Counseling and support for mother and family</li> <li>• Referral for legal, economic, psychological or other social services as needed</li> </ul>

In each facility it should be clear who performs which function related to early infant identification. The units of a typical district facility are on the table below and the tasks are on the left column. It is important to review these to see where the gaps are in your facility.

**Table 12. Actions and Tasks in Pediatric HIV Care and.....**

	OPD	U5 Clinic	NRU	CTC	ANC	Postnatal ward	TB	Maternity ward	Ped Ward	HTC	CPT	ARV clinic	Other: specify Note to where referrals made
Routine check with mom on her HIV status													
Routine HIV testing of children													
Referral for HIV test													
Diagnostic HIV testing													
Trained HTC counselors (#)													
Referrals for CD4													
Referrals for virological tests or DBS PCR													
Trained counselors in infant feeding													
Initiation of CPT													
Adherence counseling pre-ART													
ART prescribed													
Adherence counseling													

## **IMPORTANCE OF FOLLOW-UP**

Follow-up of HIV positive women, their exposed babies and HIV positive infants is very important in the management of HIV at facility level. This gives an opportunity to these women and their children to access services available at the health facility such as post natal check ups, immunization of babies, growth monitoring, infant feeding, and referral for clinical HIV staging, ARV therapy, cotrimoxazole preventive therapy (CPT), and clinical management of opportunistic infections along with other basic child health services.

## **ACTIVE FOLLOW-UP MECHANISM**

By all means patients who do not turn up for an appointment date should be followed-up by health surveillance assistants of that catchment area. Therefore all the details of the patient should be provided to the Health Surveillance Assistants.

The patient's details should include

- The name of the patient
- Name of next of kin
- Name of Village
- Physical location of the patient's
- Traditional Authority
- Reasons for follow-up

The health care providers should provide details to Health Surveillance Assistants the moment they notice that clients are not coming for follow up.

# APPENDIX A

## WHO PEDIATRIC CLINICAL STAGES

**MEDICAL HISTORY AND PHYSICAL EXAMINATION SHOULD BE USED TOGETHER TO STAGE CLIENTS <14 YEARS OLD USING THE FOLLOWING CRITERIA<sup>1</sup>:**

### **PEDIATRIC CLINICAL STAGE 1**

- Asymptomatic
- Persistent Generalized lymphadenopathy

### **PEDIATRIC CLINICAL STAGE 2**

- Unexplained persistent hepatomegaly and splenomegaly
- Papular itchy skin eruptions
- Extensive skin warts (human papilloma virus)
- Extensive molluscum contagiosum
- Recurrent oral ulcerations
- Unexplained persistent parotid gland enlargement
- Lineal gingival erythema
- Herpes zoster
- Recurrent or chronic respiratory tract infections (sinusitis, otorrhoea, tonsillitis, otitis media)
- Fungal nail infections

### **PEDIATRIC CLINICAL STAGE 3**

- Moderate unexplained malnutrition not responding to standard therapy
- Unexplained persistent diarrhea for longer than 14 days
- Unexplained persistent fever above 37.5 (intermittent or constant for longer than one month)
- Persistent oral candida (outside the first 6-8 weeks of life)
- Oral hairy leukoplakia
- Acute necrotizing ulcerative gingivitis or periodontitis

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<sup>1</sup> WHO Case Definitions for HIV for Surveillance and Revised Clinical Staging and Immunological Classification of HIV-Related Disease in Adults and Children. Retrieved from URL <http://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf>

- TB lymphadenopathy
- Pulmonary tuberculosis
- Severe recurrent presumed bacterial pneumonia
- Symptomatic lymphoid interstitial pneumonitis
- Chronic HIV-associated lung disease, including bronchiectasis
- Unexplained anaemia
- HIV associated cardiomyopathy or HIV associated nephropathy

## **PEDIATRIC CLINICAL STAGE 4**

- Unexplained severe wasting, stunting, or severe malnutrition not responding to standard therapy
- Pneumocystis carinii jiroveci pneumonia
- Recurrent severe presumed bacterial infections (e.g. empyema, pyomyositis, bone or joint infections, meningitis, sepsis, but excluding pneumonia)
- Toxoplasmosis of the brain
- Cryptosporidiosis with diarrhea > 1 month
- Isosporiasis with diarrhea > 1 month
- Cryptococcosis, extrapulmonary
- Cytomegalovirus of an organ other than liver, spleen or lymph node
- Chronic herpes simplex infection (orolabial or cutaneous for > one month) or visceral at any site
- Progressive multifocal leucoencephalopathy
- Any disseminated endemic mycosis
- Candidiasis of oesophagus, trachea, and bronchus
- Atypical mycobacteriosis, disseminated or lungs
- Extrapulmonary tuberculosis, excluding TB lymphadenopathy
- Lymphoma (cerebral or B cell non-Hodgkin)
- Acquired HIV associated rectal fistula
- Kaposi's sarcoma
- HIV encephalopathy

## APPENDIX B

### HIV TESTING FOR THE CHILD WITH POSSIBLE HIV INFECTION/HIV EXPOSED

Table B-1. HIV Testing In Children Born To Known HIV Positive Women

Age	HIV testing	What results mean	Considerations
<18 months	HIV antibody test rapid test or lab based antibody test	If positive, test shows either mother's antibody or child's HIV antibody is present.  <b>HIV antibody testing from 9-12 months of age if positive usually suggests child is infected.</b>  Do virological test if child is sick with signs or symptoms that suggest HIV infection.	In first few months of life if positive confirms child has been exposed to HIV, as passive transfer of maternal antibodies can cause positive test results.
		If negative and not breastfed = not infected  If negative but still breastfed = repeat test once breastfeeding is discontinued for 6 weeks or more	Negative test usually rules out infection acquired during pregnancy and delivery. But child can still be infected by breastfeeding.
	<b>HIV virological test</b> done to detect the virus itself	Positive virological test at any age = child is infected	Best to perform from 4-6 weeks of age or more
		Negative virological test and never breastfed or not breastfed in the last 6 weeks = child is not infected	Negative results if still breast feeding need to be confirmed 6 weeks or more after breast feeding discontinued.  If older than 9-12 months - by this time antibody testing can be used before doing another virological test, as only children who still have HIV antibody need another virological test.
≥18 months	<b>HIV antibody test</b> rapid test or lab based antibody test	Valid results as for adults. Negative = the child is not infected; Positive = the child is infected.	If negative <u>and</u> still breastfed – repeat test once breastfeeding discontinued for 6 weeks or more.



# APPENDIX C

## RESOURCES ON COTRIMOXAZOLE PREVENTIVE THERAPY WITH EXAMPLES FROM MALAWI

### COTRIMOXAZOLE PREVENTIVE THERAPY (CPT)

1. Dosing card
2. Dose by age
3. Dispensing guidelines
4. Malawi CPT passport card
5. Malawi CPT pharmacy register card

**Table C-1. Cotrimoxazole Dosing Card**

<b>Cotrimoxazole Dosing Card</b>		
<b>Cotrimoxazole Prophylaxis for Infants and Children Dosing Recommendations</b>		
Trimethoprim/Sulfamethoxazole, CTX/SMZ, Cotrimoxazole, Septrim®, Bactrim®		
Age	Suspension 40 mg TMP/200 mg SMZ per 5 ml	Single-Strength Tablet 80 mg TMP/400 mg SMZ
< 6 months	2.5 ml daily	1/4 tablet daily
6 months-5 years	5 ml daily	1/2 tablet daily
6 years-14 years	10 ml daily	1 tablet daily
>14 years	—	2 single-strength or 1 double-strength tablet daily

**Table C-2. Dose by Age: What are the doses of CPT**

Children – aged 5 to 14 years	One tablet (480mg) in the morning
Children – aged 6 months to 4 years	Half a tablet (240mg) in the morning
Children – aged 6 weeks to 6 months	Quarter of a tablet (125 mg) in the morning
Children – less than 6 weeks	No CPT

#### **How is CPT distributed to patients:**

In tins of 120 tablets, each tablet being cotrimoxazole 480mg. These tins provide:-

- 2 months supply for adults
- 4 months supply for children aged 5–14 years
- 8 months supply for children aged 6 months to 4 years
- 16 months supply for children aged 6 weeks to 6 months

**CPT card in health passport (Table C-3)**

These cards are to be widely available in out-patient departments, under 5 clinics, Nutritional Rehabilitation Units, Ante-natal and Post-natal clinics and in Adult and Paediatric wards

- The clinician, who decides on CPT, must issue the CPT card to the patient with the instruction to keep it in the health passport. In the CPT card, the clinician must write the name of the patient, the name of the health facility, the reason for CPT and give his / her signature
- The patient takes the health passport and CPT card to the pharmacy
- The pharmacist must write on the CPT card the CPT number and the date and number of tins of CPT given to the patient
- Every time the patient comes for review the pharmacist must write the date and number of tins of CPT administered

**CPT register kept in the Pharmacy (Table C-4)**

- The pharmacist must write the CPT number and name of the patient in the CPT register
- Every time a tin of CPT is dispensed the pharmacist must indicate the date

**Table C-3. CPT Card to be kept in the Health Passport**

Name of Patient:									
Name of Health Facility:									
Reason for CPT:					Signature of Clinician:				
CPT Number (given by the pharmacist and entered to the CPT Register):									
Date	Tins CPT	Date	Tins CPT	Date	Tins CPT	Date	Tins CPT	Date	Tins CPT

**Table C-4. CPT register kept in the Pharmacy**

Pediatric Cotrimoxazole	Pediatric Cotrimoxazole
Prophylaxis	Prophylaxis
<p>Important prescribing information</p> <ul style="list-style-type: none"> <li>Cotrimoxazole is usually well-tolerated but should be regularly monitored. Tolerance and adherence should be assessed at every visit.</li> <li>Most common side effects are gastrointestinal (e.g. nausea, vomiting, diarrhea); these are usually seen within two weeks of initiation.</li> <li>Rash and fever are rare but reported side effects in children.</li> <li>Marrow suppression may lead to neutropenia and anemia, and caution is warranted when using cotrimoxazole with other drugs known to have hematologic toxicity. Where possible, initiation of cotrimoxazole and zidovudine (AZT, ZDV) should be separated by 4–6 weeks.</li> <li>Cotrimoxazole can also cause hepatitis, or asymptomatic increase in liver enzymes (transaminitis). Where possible, initiation of cotrimoxazole and nevirapine-containing ART should be separated by 8-12 weeks.</li> <li><b>Contraindications</b> to cotrimoxazole include—Sulfa allergy—Severe renal insufficiency (creatinine &gt; 3 times normal)—Severe hepatic insufficiency (LFTs &gt; 5 times normal)</li> <li>Dapsone may be used in place of cotrimoxazole when necessary. The appropriate dose for children &gt; 4 weeks of age is 2 mg/kg/day. Important information for parents:</li> <li>Cotrimoxazole prevents serious infections in children with HIV and can help them feel better and live longer. It is not an antiretroviral drug, and does not treat or cure the HIV virus.</li> <li>Cotrimoxazole may be given with or without food.</li> </ul>	<p>The prophylactic use of cotrimoxazole (Septrim®, Bactrim®, TMP/SMX, CTX, trimethoprim/sulfamethoxazole) is a critically important component of HIV care.</p> <p>Pneumocystis pneumonia is a common and deadly infection, frequently seen in infants with HIV. It generally occurs between three and six months of life, often as the first sign of HIV infection and before the child’s HIV status has been determined.</p> <p>Cotrimoxazole prophylaxis has been clearly shown to prevent Pneumocystis pneumonia and to save lives, and national and international treatment guidelines strongly support its use.</p> <p>Pediatric cotrimoxazole prophylaxis is recommended for:</p> <ul style="list-style-type: none"> <li>All HIV-exposed infants (i.e. all infants whose mothers are known to have HIV) from 4-6 weeks of age until the child is no longer breastfeeding and is determined to be uninfected</li> <li>All HIV-infected infants &lt; 12 months • All HIV-infected children 1–4 years with:— Clinical stage 2, 3 or 4 disease—CD4 &lt; 25 %</li> <li>All HIV-infected children &gt; 5 years with:— Clinical stage 3 or 4 disease—CD4 &lt; 350</li> <li>All HIV-infected infants and children with prior Pneumocystis pneumonia.</li> </ul> <p>All programs providing HIV/AIDS care should follow local and national treatment guidelines, which remain the final authority for country-specific protocols.</p>

From  
**ICAP Infant Diagnosis Manual, Columbia**  
 Elaine J. Abrams • Ruby Fayorsey • Luis Felipe Gonzalez  
**Diagnosis of HIV Infection in Infants**  
 A Comprehensive Implementation and Clinical Manual  
 International Center for AIDS Care and Treatment Programs  
 Columbia University Mailman School of Public Health



# APPENDIX D

## TIPS: GIVING MEDICINES TO PEDIATRIC HIV/AIDS PATIENTS

**REMEMBER: Remind caregivers to keep medicines away from the other children to avoid a dangerous poisoning situation!**

### **How can we advise caregivers to give medicine to their babies and toddlers?**

1. Prepare and measure the medicine. Use a syringe or soft plastic dropper, or a spoon for medicine mixed in food.
2. With the baby on your lap, brace the baby's head close to your body so the head stays still. Tilt the head back a little.
3. Put the medicine into the corner of the baby's mouth towards the back, along the side of the tongue. This makes it harder for the baby to spit. Give little amounts at a time to prevent choking and spitting.
4. Gently keep the baby's mouth closed until he or she swallows.
5. Never yell or show anger. Speak softly and say kind things.
6. When all the medicine is finished hold the baby sitting up for a few minutes and cuddle and comfort the baby. Offer the baby water or juice only after the procedure is finished.

### **How can we advise caregivers to assist older children with taking their medicine?**

1. Keep trying different foods to cover the taste until you find the one that works.
2. Offer your child choices. What kind of food does the child want the medicine (if any) mixed with? What kind of spoon or cup does the child prefer? Which type of drink?
3. Some children do best when encouraged to take a deep breath and drink fast. Others take their medicine a step at a time with a drink in between. Sometimes it helps to count for your child while he or she takes it.
4. Offer a reward such as a sticker or maybe even something good to eat or a game to play afterward.
5. Never ask the child whether he or she *wants* or *will take* the medicine. Instead, be firm and state that the child must take it, but offer as many choices as possible.
6. Connect taking the medicine not only to feeling better or having the body to work better, but also to a desired activity or outcome.

### **What are some problems that arise with giving medicine?**

1. Vomiting the medicine: If your child vomits within ½ hour, you can repeat the medicine.
2. Missing a dose: If your child misses a dose, give it as soon as you remember and then continue the regular schedule. Do not give 2 doses at the same time.

3. **Refusing the medicine:** Let your child know that you understand that taking medicine is not fun. Do not threaten, punish, hit or yell at your child if he or she has a hard time taking the medicine. This will only make the situation worse and could make your child feel bad about him or herself.

### **How to mix medicines with food or drinks**

Both liquid medicines and powders can be mixed with drinks or food.

**Remember:** tell the caregiver not to put the medicine in a large amount of food or liquid, because if the child doesn't drink or eat the whole amount, he or she will not get all the medicine. For example, don't add medicine to a whole bottle or milk or juice, or a bowl of cereal or fruit. Do not mix the medicine with food that is essential to your child's diet, like formula. The child may associate that bad taste with all formula and stop drinking it, even if it doesn't contain medicine.

Coat the tongue with a sugary, sweet thick substance. Good things to mix with are juice, ice cream, chocolate syrup and other flavorful foods. The taste of some medicines is very hard to cover up and the caregiver should be told to not give up and keep trying different methods until she finds one that works.

Family Health International

30 August 2004

Adapted from *NYU Manual for Coast General Provincial Hospital, Mombasa, Kenya, 2001*

# APPENDIX E

## SUMMARY OF WHO STATEMENT ON BREASTFEEDING, 2006

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 counseling 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 interventions<sup>10</sup> 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 guidance<sup>11</sup>, are available before any distribution of free commercial infant formula is considered

From

*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 2–27, 2006*



# APPENDIX F

## SAMPLE TABLE OF SUPPORTIVE INFORMATION FOR PARENTS ON FEEDING OF CHILDREN DURING AND AFTER ILLNESSES

Infants 0 to 6 months	
<b>Care giver</b>	
Mother and father	During illness, increase the frequency of breastfeeding for your baby to recover faster.
Supporting information	<ul style="list-style-type: none"> <li>• Continue to breastfeed during diarrhea, even increasing the frequency, to replace the liquid lost.</li> <li>• Breastfeeding more during illness will help your baby to fight the sickness and not lose weight.</li> <li>• Breastfeeding also provides comfort to a sick baby.</li> <li>• Sick mothers can continue to breastfeed their baby</li> </ul>
Mother	After each illness increase the frequency of breastfeeding for the baby to regain health and weight.
Supporting information	<ul style="list-style-type: none"> <li>• Each time a baby is sick, s/he will lose weight so it is important to breastfeed as often as possible.</li> <li>• Your breast milk is the safest and most important food you can offer your baby to regain her/his health and weight.</li> </ul>
Children 6 to 24 months	
Mother and father	During illness, increase the frequency of breastfeeding and offer additional food to your child to help her/him recover faster.
Supporting information	<ul style="list-style-type: none"> <li>• Fluid and food requirements are higher during illness.</li> <li>• Take time to patiently encourage your sick child to eat as her/his appetite may be decreased because of the illness.</li> <li>• It is easier for a sick child to eat small frequent meals so feed the child foods s/he likes in small quantities throughout the day.</li> <li>• It is important to keep breastfeeding and feeding complementary foods to your child during illness to maintain her/his strength and reduce the weight loss.</li> </ul>
Mother and father	When your child has recovered from an illness, give her/him one additional meal of solid food each day during the two weeks that follow to help child recover quickly.
Supporting information	<ul style="list-style-type: none"> <li>• Children who have been sick need extra food and should be breastfed more frequently to regain the strength and weight lost during the illness.</li> <li>• Take enough time to actively encourage your child to eat this extra food as s/he still may not appear hungry due to the illness.</li> </ul>

## Type, Frequency, and Amounts of Complementary Foods Required By Age

Age	Texture and type	Frequency	Amount at each meal
6 months	Enriched soft porridge with sugar, oil and any of these: pounded groundnuts, beans meat/chicken/fish/ usipa well-mashed, egg yolk vegetable, or fruit	2 times a day plus frequent breastfeeds	2–3 tablespoons
7–8	Mashed foods. Enriched soft porridge/with sugar, oil & any of these: eggs pounded groundnuts, meat/chicken/fish/ usipa well-mashed vegetable, or fruit	3 times a day plus frequent milk feeds per day including yogurts plus frequent breast feeds per day	Increasing gradually to 2/3 of a 250 cup at each meal
9–11	Pounded enriched/finely chopped or mashed foods, and foods that baby can pick-up	3 to 4 meals plus 1 snack between meals plus frequent breast feeds per day	¾ of a 250ml cup or bowl
12–24	Family foods, chopped or mashed if necessary until the child has a full set of teeth	4–5 meals plus 1 snack between meals plus frequent breast feeds per day	A full 250ml cup/bowl

### Example of the Six Food Groups in Malawi

<p>Staples</p> <ul style="list-style-type: none"> <li>• Cereals – Maize, rice, sorghum, millet,</li> <li>• Starchy roots – cassava, potatoes, sweet potatoes</li> <li>• Starchy fruits – green bananas, plantains</li> </ul>	<p>Legumes and nuts</p> <ul style="list-style-type: none"> <li>• Soya beans</li> <li>• Groundnuts</li> <li>• Beans</li> <li>• Peas</li> </ul>
<p>Green leafy and yellow vegetables</p> <ul style="list-style-type: none"> <li>• Pumpkin</li> <li>• Pumpkin leaves</li> <li>• Carrots</li> <li>• Spinach</li> </ul>	<p>Food from animals</p> <ul style="list-style-type: none"> <li>• Meat, fish, poultry</li> <li>• Milk, eggs</li> <li>• Insects, rodents</li> </ul>
<p>Fruits</p> <ul style="list-style-type: none"> <li>• Mango</li> <li>• Pawpaw</li> <li>• Guava</li> <li>• Banana</li> <li>• Orange</li> <li>• Baobab</li> <li>• Custard apple</li> </ul>	<p>Fats and substitutes</p> <ul style="list-style-type: none"> <li>• Cooking oil</li> <li>• Margarine</li> <li>• Peanut butter</li> <li>• Avocado</li> <li>• Fat from meat</li> </ul>