

Integrated Management of Childhood Illness

Complementary course on HIV/AIDS

Module 2

Assess, classify and manage the child for HIV/AIDS



Department of Child and Adolescent
Health and Development (CAH)

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1.0 INTRODUCTION

Children with suspected or confirmed HIV infection have special needs, and therefore need to be cared for differently from children who are uninfected.

To enhance your understanding of issues relating to managing suspected or confirmed HIV-infected children, this module first provides basic information about HIV and the risks of mother-to-child transmission of HIV. It then teaches you how to assess, classify and manage acute conditions in young infants and children with suspected or confirmed HIV infection. It also teaches you how to prevent illness in these children.

When a mother brings her young infant or child to the clinic you will need to perform the following tasks:

- **ASSESS** and **CLASSIFY** the child for *ALL* main symptoms of IMCI and for signs that necessitate URGENT or NON-URGENT referral.
- **ASSESS** and **CLASSIFY** the child for HIV/AIDS
- **IDENTIFY TREATMENT AND TREAT** the child, including prophylaxis to prevent infections
- **COUNSEL** the mother on the treatment provided, on feeding and on care for herself
- **FOLLOW-UP** the mother and baby

If you only assess the young infant or child for the particular problem or symptom that he has come with, you might overlook other signs of disease and you might overlook signs or features of HIV infection or of symptomatic HIV infection. The child might then get sicker or might have more frequent illnesses that need hospitalisation or hospital treatment.

2.0 LEARNING OBJECTIVES

By the end of this module you should be able to:

- Explain briefly and in basic terms what HIV is and how it is transmitted to infants and children
- Describe how to assess and classify a child for HIV/AIDS
- Describe how to assess, classify and treat acute common illnesses in young infants and children classified for HIV/AIDS
- Describe how to assess, classify and treat common opportunistic infections in infants and young children classified for HIV/AIDS, with a focus on skin and mouth conditions
- Describe how to prevent common illnesses in infants and young children classified for HIV, through :
 - cotrimoxazole prophylaxis
 - immunization
 - micronutrient and Vitamin A supplementation

During this module you will need to keep your IMCI chart booklet close to you. As you read this manual open your chart booklet to the relevant page and refer to the relevant chart. It is best if you work in small groups to go through this manual and cross-refer to the IMCI chart booklet.

3.0 BASIC INFORMATION ABOUT HIV

3.1 HIV AND THE HUMAN BODY

- Every healthy person has a strong system to defend the body against diseases. This defense system is called the immune system. White blood cells are an important part of this defense system and protect the body against all kinds of diseases – they can be thought of as the “soldiers” of the body
- **Lymphocytes** are one of the types of white blood cell in the body and some of these have a marker on their surface called CD4, and so are called **CD4 lymphocytes**. These CD4 lymphocytes are responsible for warning your immune system that there are germs trying to invade the body.
- **HIV** (Human Immunodeficiency Virus) is a virus that infects and takes over

cells of the immune system. Although HIV infects a variety of cells, its main target is the CD4 lymphocyte.

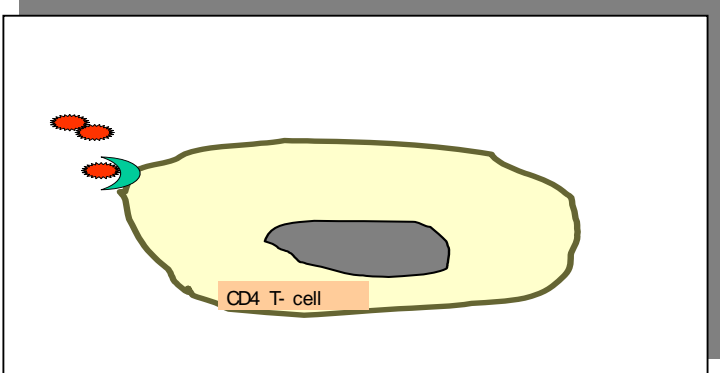
- The human body is made up of millions of different cells. Each body cell is able to make new cell parts, in order to stay alive and to reproduce. Viruses take advantage of this ability by hiding their own material in the centre (nucleus) of the body cell, and so when the cell tries to make new parts, it makes new copies of the virus as well.
- When CD4 lymphocytes are infected with HIV, the HIV virus uses the CD4 cell to make new copies of itself, these copies then go on to infect other cells.
- HIV infected CD4 cells are not able to work very well, and die early. The loss of these CD4 cells makes the immune system weak and makes the children (and adults) be much more likely to develop illness from types of germs that would not normally cause them to be ill, or to be more sick with common germs. These infections are called opportunistic infections - as they take the opportunity of the body's defense being weak to flourish).

Figure 2.1 summarizes what happens to HIV after it enters a human cell.

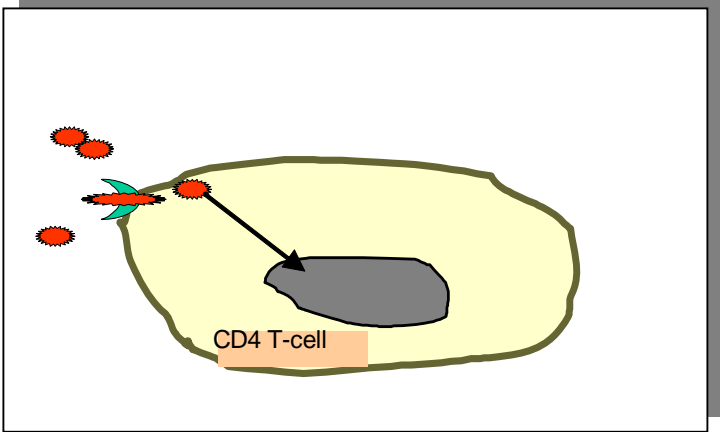
FIGURE 2.1: MAKING NEW COPIES OF HIV

Once HIV binds to a cell, it hides HIV material inside the cell: this turns the cell into a sort of HIV factory.

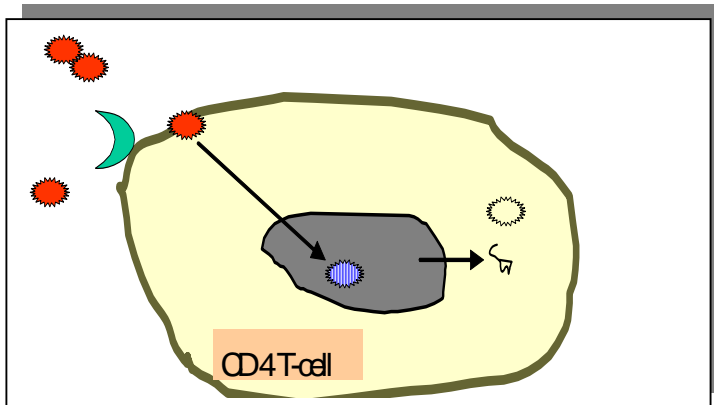
- = HIV
- = gate of entry for HIV in the CD4 cell
- = centre (or nucleus) of the CD4 cell
- = HIV that has changed
- = part of new HIV



HIV is entering the CD4 cell.

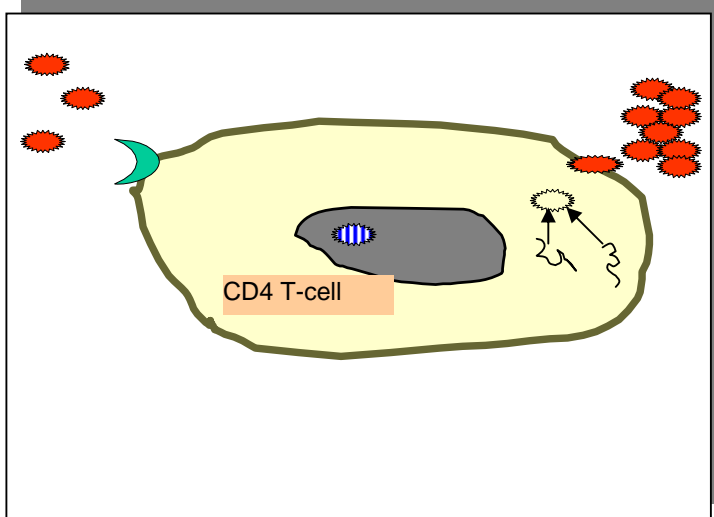


Now, HIV wants to enter the centre of the cell.
 To do this, it needs to change the way it looks, and make a copy of itself which can take over the centre of the cell.
 The special substance HIV needs to make this change is called *reverse transcriptase*



HIV is present in the centre of the cell, in a different shape.

Now, the centre of the cell starts to make new parts of HIV instead of making new parts for the body's defence.



Before leaving the cell, the new parts of HIV need to be put together, just like parts of a car need to be put together in the factory before they can leave the factory to be sold.

HIV has a special substance (*protease*) that helps to put the different parts together to form a new HIV before it leaves the cell.

HIV attacks many CD4 cells. The infected CD4 cell will first produce many new copies of the virus, and then die.

The new copies of HIV will then attack other CD4 cells, which will also produce new copies of HIV and then die.

This goes on and on: more and more CD4 cells are destroyed, and more and more new copies of HIV are made.

When a person gets infected with the HIV, the virus will start to attack his/her immune system. Since HIV attacks mostly CD4 cells, measurement of the number of CD4 cells in an HIV-infected child's blood is a good way of checking how well their defence system is still working.

In adults, during the first years following infection, the immune system – although slowly damaged by the HIV virus – still functions quite well. The infected adult will have no symptoms, or only minor symptoms, such as swollen lymph nodes or mild skin diseases. Most adults don't even know they are HIV infected at this stage. Usually after several years the adult's immune system gets more and more damaged and weaker, and so the person becomes vulnerable to germs and diseases that normally they fight off. These infections are called 'opportunistic infections' because they take advantage of the weak immune system to cause disease. It usually takes around 7-10 years after initial infection with HIV before someone gets ill and develops serious sickness from HIV. (Treatment with ART will be discussed in more detail in Module 4).

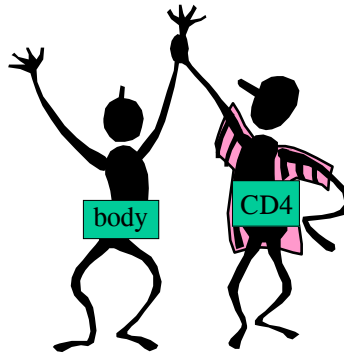
In children infected with HIV the course of the infection is a little bit different because children immune systems are not yet well developed. HIV seems to damage the immune system more easily and especially if the infection is got while the baby is in the mother womb or at the time of delivery. In these children it usually takes a shorter time before the immune system is weakened or destroyed; and these HIV infected children get more ordinary common infections or unusual opportunistic infections and progress to AIDS more rapidly. If untreated, three-fourths of children who are infected will develop problems from HIV early and will die before the age of five.

In the same way as adults when the child's immune system gets damaged it becomes weak and so the child can get sick due to germs that don't usually cause serious disease. For example, a child may have candida living normally in the mouth but when the immune system is damaged, the candida causes mouth ulcers or soreness (oral thrush). As the damage to the immune system gets worse the HIV disease 'progresses', the CD4 either percent or total count gets less and the child becomes highly vulnerable to life-threatening AIDS-defining illnesses such as PCP pneumonia, unusual cancers (lymphoma), recurrent bacterial infections and HIV brain damage (encephalopathy).

Figure 2.2 illustrates how HIV attacks our health.

Figure 2.2: HOW HIV ATTACKS OUR HEALTH

1. The CD4 cell is a kind of white blood cell. The CD4 is the friend of our body.



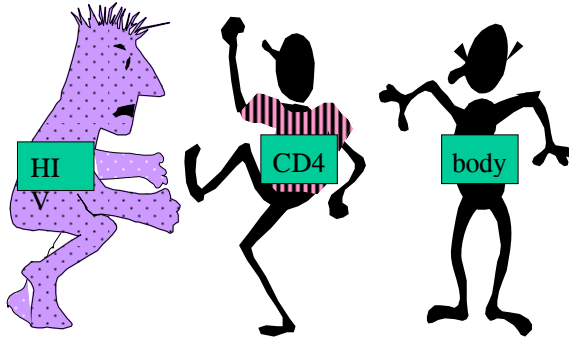
2. Problems like cough try to attack our body, but the CD4 fights them to defend the body, his friend.



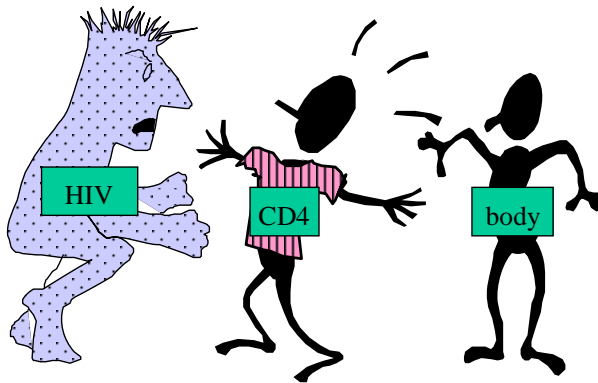
3. Problems like diarrhoea try to attack our body, but the CD4 fights them to defend the body.



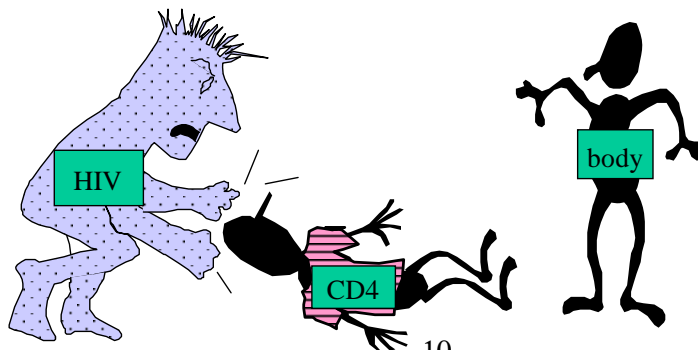
4. Now, HIV enters and starts to attack the CD4.



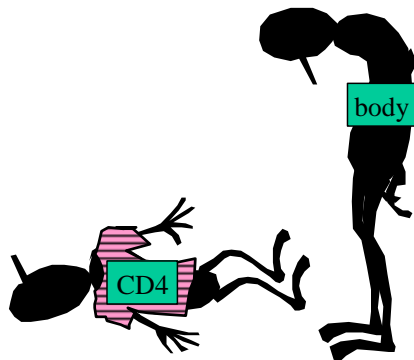
5. The CD4 notices he cannot defend himself against HIV!



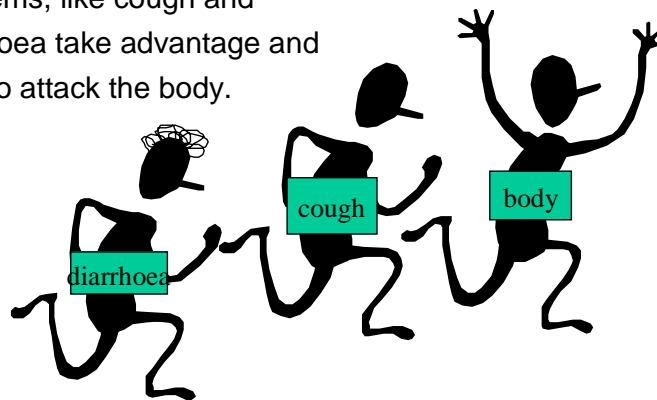
6. Soon, CD4 loses his force against HIV.



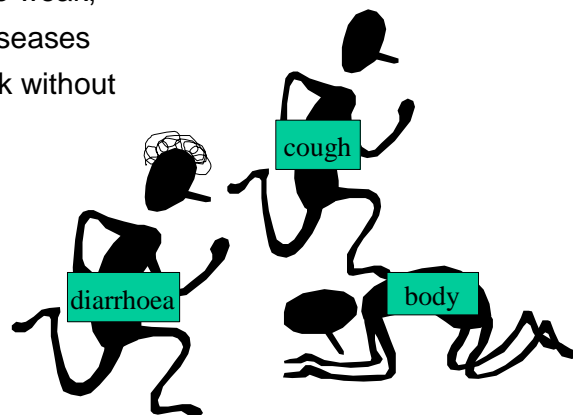
7. CD4 loses the fight. The body remains without defence.



8. Now, the body is all alone, without defence. All kinds of problems, like cough and diarrhoea take advantage and start to attack the body.



9. In the end, the body is so weak, that all diseases can attack without difficulty.



GROUP EXERCISE A

Use a few minutes to define the following terms: immune system, CD4, opportunistic infection. Think about the definitions and then call them out loud so that you share your definitions with the rest of the participants. The facilitator will then write the most suitable definition down on flip chart.

3.1 HOW CHILDREN BECOME INFECTED WITH HIV

Vertical transmission, or mother-to-child transmission of HIV (MTCT) is the main way that children are infected with HIV.

The term Mother-to-Child transmission of HIV is used in this document because the source of the child's HIV infection is the mother. Use of the term mother-to-child transmission does not imply blame, whether or not a woman is aware of her own infection status. A woman can acquire HIV through unprotected sex with an infected partner, through receiving contaminated blood or through non-sterile instruments (such as with intravenous drug users) or medical procedures.

There are various times and ways during which HIV can be transmitted from mother to child. These are:

- During pregnancy
- During labour and delivery
- During breastfeeding

GROUP EXERCISE B

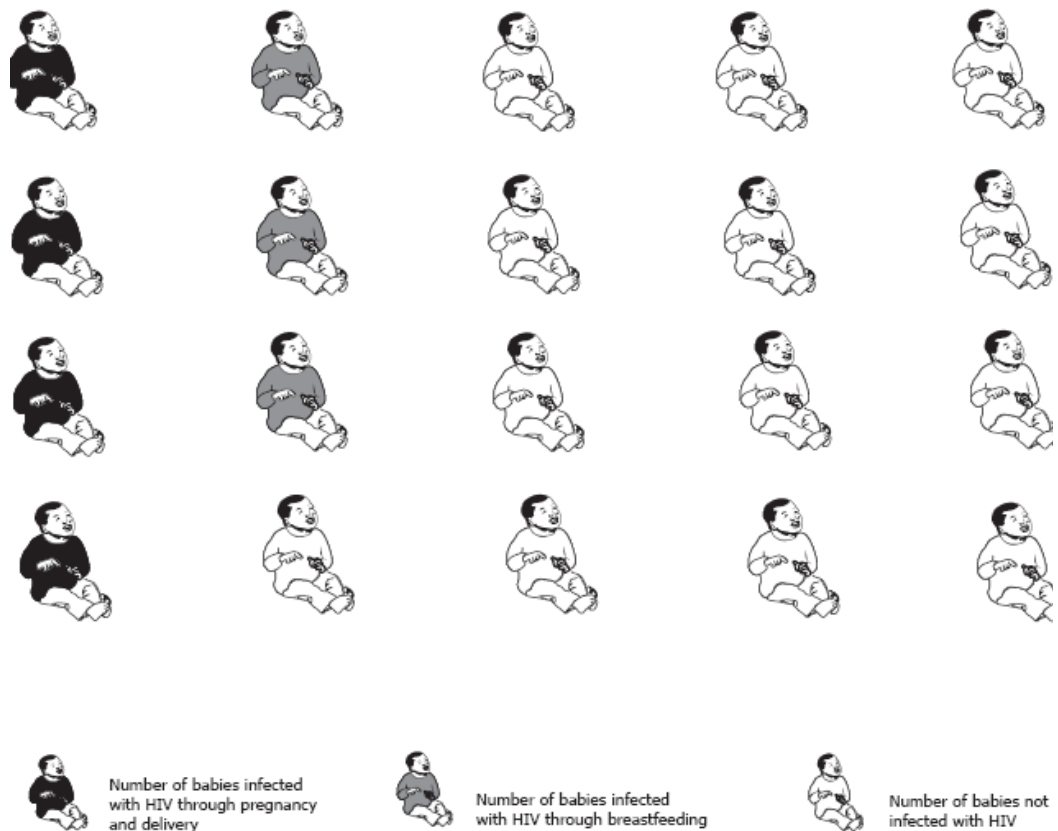
In small groups, for 1-2 minutes discuss what you think is the risk of HIV transmission during pregnancy, labour and delivery and postnatally?

Do all HIV positive nursing women transmit HIV to their children through breastfeeding?

After 1-2 minutes the facilitator will explain the risks of mother to child transmission at different time points in greater detail.

Mother to child transmission (MTCT) is when an HIV infected woman passes the virus to her baby. This can occur during pregnancy, labour and delivery, or whilst breastfeeding. It is however important to note that not all HIV infected women will automatically transmit the virus to their child.

Using the diagram below as an example, if there are 20 babies born to 20 HIV infected women(and nothing is done to prevent HIV transmission) then approximately 7 of the 20 women will transmit HIV to their infants during pregnancy, labour and delivery and during breastfeeding. This means that the overall risk of MTCT is 7 out of 20, or 35% (one-third).



The overall risk of 35% (one third) can be broken down as follows: the estimated risk of becoming infected during pregnancy, labour and delivery is about 20% and the estimated risk becoming infected postnatally (after delivery), through breastfeeding is about 15%. If we go back to the diagram, this means that about 4 out of 20 babies (20%) born to HIV positive mothers will be infected during pregnancy and delivery and 3 out of 20 babies (15%) will become infected postnatally.

The risk of transmission during pregnancy is low, as the developing baby is protected by the placenta. During labour and delivery the risk is increased through sucking, absorbing or aspirating blood or cervical fluid. The risk can be further increased by unsafe obstetric practices such as routine episiotomy, early rupture of membranes, placenta praevia etc. An elective caesarean section can reduce risks.

Mixed feeding compared to exclusive feeding may increase the risk of HIV transmission due to potential damage to the lining of the infant's gut by food particles or the introduction of an allergen or bacteria that causes inflammation. This can lead to easier access of the HIV virus from the mother's breast milk into the infant's blood.

For these reasons, WHO recommends exclusive breastfeeding up to 6 months until the mother can use replacement feeding safely, followed by completely stopping breastfeeding and replacement feeding. Two studies have shown that exclusive breastfeeding carries a smaller risk of HIV transmission when compared with mixed feeding.

You will learn more about HIV transmission through breastfeeding, and counseling of the mother around feeding options in Module 3.

Other ways in which children can get HIV are:

- Sexual abuse
- unsafe injections
- Blood transfusion from HIV infected blood products

4.0 ASSESS AND CLASSIFY THE CHILD FOR HIV

4.1 TESTING FOR HIV INFECTION

Different tests are available to diagnose HIV infection. Before you can assess and classify an infant or child for HIV infection it may help you to understand the different tests which detect antibodies and tests which detect the virus itself, and how to understand the results of these tests. This information is summarized in the table below.

Antibody versus virological tests

Antibody tests, including rapid tests	Virological assays such as RNA or DNA PCR
<p>These tests detect antibodies made by immune cells in response to the virus. They do not detect the virus itself.</p> <p>Antibodies from the mother pass on to the child and most have gone by 12 months of age , but in some instances they do not disappear until the child is 18 months of age</p> <p>This means that a positive antibody test in children under the age of 18 months is not a reliable way to check for infection of the child</p>	<p>These tests directly detect the presence of the HIV virus or products of the virus in the blood.</p> <p>Positive virological tests can therefore reliably detect HIV infection at any age, even before the child is 18 months old.</p> <p>If the tests are negative and the child has been breastfeeding, this does not rule out infection as the baby may have just become infected. Tests done six weeks or more after completely stopping breastfeeding are thought to reliably rule out infection.</p>

The breast milk of an HIV-positive mother can transmit HIV infection. You learnt about this in section 3.1 and you will learn more about it in Module 3. The main point that you need to remember is a positive virological test at any age says the baby IS HIV infected, and a positive ANTIBODY test at 18 months or more says the child IS HIV infected.

The table below provides details about how rapid antibody tests and virological tests should be interpreted in young infants and children. It takes into consideration whether the child is breastfed or not.

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	<p>If positive, test shows either mothers or child HIV antibody present . HIV antibody testing from 12 months of age if positive usually suggests child is infected</p> <p>Do virological test if child is sick with signs or symptoms that suggest HIV infection</p>	Confirms child has been exposed to HIV as passive transfer of maternal antibodies can cause positive test results.
		<p>If negative and not breastfed = not infected If negative but still breastfed = repeat test once breastfeeding is discontinued for 6 weeks or more</p>	Negative test usually rules out infection acquired during pregnancy and delivery. But child can still be infected by breastfeeding.
	HIV virological test done to detects the virus itself	Positive virological test at any age = child is infected	Best to perform when child from 6 weeks of age or more
		<p>Negative virological test and never breastfed or not breast fed in the last 6 weeks = child is not infected</p>	<p>Negative results if still breast feeding need to be confirmed 6 weeks or more after breast feeding discontinued.</p> <p>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</p>
≥18 months	HIV antibody test rapid test or lab based antibody test	<p>Valid results as for adults. Negative = the child is not infected; Positive = the child is infected.</p>	If negative <u>and</u> still breastfed – repeat test once breastfeeding discontinued for 6 weeks or more.



SHORT ANSWER EXERCISE A: HIV TESTING

Answer the following questions:

1. A 20 month old baby has a positive virological test. Is the child HIV infected?
2. A 2 month old baby has a positive virological test. Is the child HIV infected?
3. A 2 month breastfeeding baby has a positive virological test. Is the child HIV infected?
4. A 2 month old breastfeeding baby has a positive HIV antibody test. Is the child HIV infected?
5. An 18 month old breastfeeding child has a positive HIV rapid antibody test. Is the child HIV infected?
6. A 9 month old breastfeeding baby has a negative virological test. Is the child HIV infected?
7. A 9 month old non-breastfeeding baby has a negative virological test. The baby last breastfed 3 months ago. Is the child HIV infected?
8. An 18 months old child has a negative antibody test. The baby last breastfed one week ago. Is the child confirmed HIV uninfected?

GROUP EXERCISE C

In small groups, for 1-2 minutes discuss why early testing of young infants and children born to HIV positive women is beneficial.

After 1-2 minutes the facilitator will lead a plenary discussion.

Early confirmation or identification of HIV infection in infants is beneficial for many reasons:

- it would guide infant feeding choices for the mother-child pair;
- help to differentiate symptomatic HIV or AIDS from diseases and conditions (such as tuberculosis, malnutrition and recurrent bacterial infections) that also occur in HIV-uninfected infants;
- guide decisions relating to when to initiate and stop regular cotrimoxazole prophylaxis and / or antiretroviral therapy and
- help alleviate the stress of the unknown as the family can take steps to deal with the HIV status, instead of wondering what it is

Often the child may be the first member of the family to be identified, and so be the 'entry point' for diagnosis of HIV within the family. Diagnosis of HIV infection in a child may provide the opportunity for mothers, fathers and care givers to access HIV care.

4.2 ASSESS AND CLASSIFY THE CHILD AGE 2 MONTHS UP TO 5 YEARS FOR HIV

Open your chart booklet to page -- "Then assess for HIV infection".

You will need to check for Suspected Symptomatic HIV infection or exposure to HIV if the mother is known to be HIV positive or if the child has one of the following based on your previous classification:

- Pneumonia
- Persistent Diarrhoea
- Ear discharge
- Very low weight for age

You will need to note or ASK:

- Does the child have PNEUMONIA?
- Does the child have PERSISTENT DIARRHOEA?
- Does the child have ear discharge?
- Does the child have VERY LOW WEIGHT?

Note: If the child has the classification: SEVERE PNEUMONIA OR VERY SEVERE DISEASE or SEVERE PERSISTENT DIARRHOEA or SEVERE MALNUTRITION then he should also be checked for SUSPECTED SYMPTOMATIC HIV INFECTION.

LOOK AND FEEL:

- Any enlarged lymph glands in two or more of the following sites:
neck, armpit or groin (generalised persistent lymphadenopathy)?
Is there oral thrush?
- Is there parotid enlargement?

Note that the results from the mother and child's HIV tests are used in the classification of process summarised in the figure on the next page.

THEN CHECK FOR HIV INFECTION**

- Does the mother and/or child have an HIV test done?

OR

- Does the child have one or more of the following conditions:
 - Pneumonia *
 - Persistent diarrhoea *
 - Ear discharge (acute or chronic)
 - Very low weight for age*

** Note that the severe forms such as severe pneumonia, severe persistent diarrhoea and severe malnutrition can be used to enter the box. Complete assessment quickly and refer child.*

If yes, enter the box below and look for the following conditions suggesting HIV infection.

Look for the following conditions suggesting HIV infection:

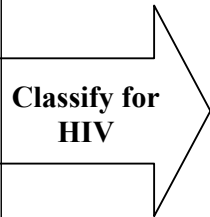
NOTE OR ASK:
Does the child have:

- PNEUMONIA?
- PERSISTENT DIARRHOEA?
- EAR DISCHARGE?
- VERY LOW WEIGHT?

LOOK AND FEEL:

- Oral thrush
- Parotid enlargement
- Generalized persistent lymphadenopathy

HIV test result available for mother/child?



SIGNS	CLASSIFY
<ul style="list-style-type: none"> • Positive HIV antibody test in child 18 months and above Or <ul style="list-style-type: none"> • Positive HIV virological test And <ul style="list-style-type: none"> • 2 or more conditions 	CONFIRMED SYMPTOMATIC HIV INFECTION
<ul style="list-style-type: none"> • Positive HIV antibody test in child 18 months and above Or <ul style="list-style-type: none"> • Positive HIV virological test And <ul style="list-style-type: none"> • Less than 2 conditions 	CONFIRMED HIV INFECTION
<ul style="list-style-type: none"> • No test results in child or positive antibody test in child <18 months And <ul style="list-style-type: none"> • 2 or more conditions 	SUSPECTED SYMPTOMATIC HIV INFECTION
One or both of the following: <ul style="list-style-type: none"> • Mother HIV positive and no test result on child Or <ul style="list-style-type: none"> • Child less than 18 months with positive antibody test And <ul style="list-style-type: none"> • Less than 2 conditions 	POSSIBLE HIV/ HIV EXPOSED
<ul style="list-style-type: none"> • No test result in child or mother And <ul style="list-style-type: none"> • Less than 2 conditions 	SYMPTOMATIC HIV INFECTION UNLIKELY
<ul style="list-style-type: none"> • Negative HIV test in mother or child AND not enough signs to classify as suspected symptomatic HIV infection 	HIV INFECTION UNLIKELY

*** a child who is already put on ART does not have to enter this HIV box*



VIDEO EXERCISE A

Watch an IMAI video training series on common manifestations of HIV/AIDS in children to demonstrate how to classify as suspected symptomatic HIV infection.



SHORT ANSWER EXERCISE B

1. Which children age 2 months up to 5 years should be checked for symptomatic HIV infection?
2. What is the difference between a HIV virological test and an HIV antibody test?
3. Which test – virological HIV antibody - would you use to detect and diagnose HIV infection in a child under the age of 18 months?
4. What is meant by “generalized persistent lymphadenopathy” in an HIV infected child?
5. What is meant by “parotid enlargement” in the context of an HIV infected child?

SHORT ANSWER EXERCISE

**SHORT ANSWER EXERCISE C:
ASSESS AND CLASSIFY FOR HIV**

Write a "T" by the statements that are True. Write an "F" by the statements that are False.

	True or false (T / F)	
A		A child with PNEUMONIA should be assessed for HIV infection.
B		A 9 week old child born to an HIV positive mother should be classified as "POSSIBLE HIV INFECTION or HIV EXPOSED".
C		A 19 month old child with a negative antibody test but having oral thrush, pneumonia and ear discharge should be classified as "POSSIBLE HIV INFECTION or HIV EXPOSED".
D		A 5 month old child with no HIV test results and with pneumonia, lymphadenopathy and very low weight should be classified as SUSPECTED SYMPTOMATIC HIV INFECTION.
E		A well 4 month old child who has no illnesses, no thrush, no lymph nodes and no parotid enlargement but who is born to an HIV positive mother should be classified as "POSSIBLE HIV INFECTION or HIV EXPOSED".
F		A well 8 month old child born to HIV positive mother and still breast feeding, antibody test negative and no features of HIV infection could be assumed free of HIV infection.
G		A 36 month old child with a positive HIV antibody test and no other features – no pneumonia, no malnutrition, no ear discharge, no thrush, no lymph nodes and no parotid enlargement can be classified as CONFIRMED HIV INFECTION.



WRITTEN EXERCISE A

Classify the following children:

1. 3 month old with PNEUMONIA, ear discharge and enlarged lymph glands. Mother is HIV positive.
2. 5 month old with PERSISTENT DIARRHOEA, VERY LOW WEIGHT and oral thrush. Mother is of unknown HIV status.
3. 7 month old with PNEUMONIA, EAR DISCHARGE AND PAROTID SWELLING. Child tested HIV positive using virological test.
4. 14 month old with PNEUMONIA, EAR DISCHARGE AND PAROTID SWELLING. Child tested HIV positive using antibody test.
5. 12 month old with PNEUMONIA, EAR DISCHARGE AND PAROTID ENLARGEMENT. Child is breastfeeding.
6. 21 month old with PNEUMONIA, PAROTID ENLARGEMENT and a positive HIV antibody test.

4.3 ASSESS AND CLASSIFY THE SICK YOUNG INFANT FOR HIV

The classification of the sick young infant for HIV differs from the classification for an older child. It is not possible to classify the sick young infant for symptomatic HIV infection as there are currently no reliable validated algorithms for this classification. Classification of the sick young infant for HIV can therefore only be one of three options:

- CONFIRMED HIV INFECTION
- POSSIBLE HIV INFECTION / HIV EXPOSED
- HIV INFECTION UNLIKELY

and will be based upon the HIV test result of the mother and /or infant.

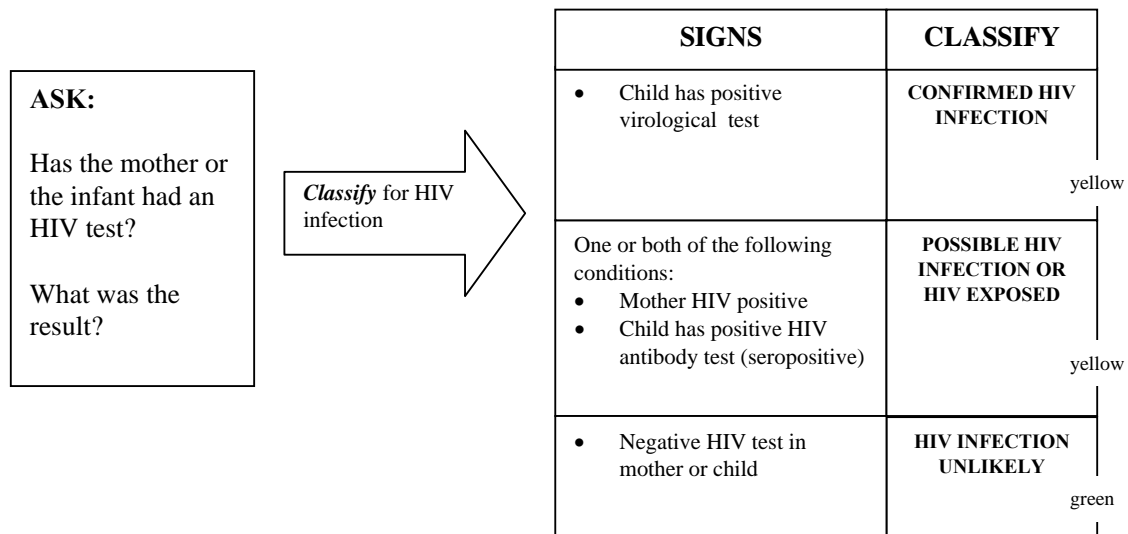
Look at the chart on page 31 of the chart booklet: assessing and classifying the sick young infant for HIV infection.

ASK:

Has the mother or child had a positive HIV test?

If the child has had an HIV test determine whether the test was an HIV antibody test or a virological test.

CLASSIFY the sick young infant for HIV infection based on the test result:



You will learn how to treat, counsel and follow-up for HIV as you progress through this IMCI Complementary course on HIV.



WRITTEN EXERCISE B

ASSESS AND CLASSIFY EACH CHILD FOR HIV

In written exercise A you met 4 children (Mishu, Dan, Ebai, Henri)

Go back to the recording forms that you used in written exercise A. Look at your classifications for each child in the written exercise.

Classify each child from written exercise A, for HIV, based, on their previous classifications from written exercise A, and the additional information provided below. Use the same recording form that you used in exercise A so that you do not have to re-write the previous classifications. Keep these recording forms as you will use them again in Module 3.

Mishu:

Mishu's mother was tested for HIV and she is positive. However Mishu has not had an HIV test. Mishu is still breastfeeding.

Dan:

Neither Dan's nor his mother has ever been tested for HIV. In addition to the original classifications that you made, Dan also has parotid enlargement but does not have oral thrush or lymphadenopathy.

Ebai:

Ebai's mother has been tested for HIV infection and is HIV positive.

Henri:

Henri's mother has been tested for HIV infection and is HIV positive. Henri had an antibody test and the result was positive.

5.0 IDENTIFY TREATMENT FOR THE YOUNG INFANT AND CHILD CLASSIFIED FOR HIV

In section 4.0 you learnt how to assess and classify the child for HIV.

Certain groups of children, classified as **SUSPECTED SYMPTOMATIC HIV INFECTION**, **CONFIRMED HIV INFECTION** or **POSSIBLE HIV INFECTION / HIV EXPOSED** will need to be referred to confirm the HIV infection and assess whether they need antiretroviral therapy (ART). You will learn more about this in Module 4 which focuses on chronic care and follow up of children with HIV.

Before starting antiretroviral therapy, a child must first be stabilised. This means any acute common illnesses and opportunistic infections must be treated and the general condition of the child improved.

5.1 TREATMENT FOR THE CHILD AGED 2 MONTHS UP TO 5 YEARS

Turn to the HIV algorithm in your chart booklet and read through how you should treat the child who has been classified for HIV infection.

The following boxes remind you of the **TREAT** charts in the IMCI algorithm.

CLASSIFY	IDENTIFY TREATMENT
CONFIRMED SYMPTOMATIC HIV INFECTION	<ul style="list-style-type: none"> - Treat, counsel and follow-up for common and opportunistic infections - Give cotrimoxazole prophylaxis - Check immunization status - Give Vitamin A supplements every 6 months beginning at the age of 6 months - Assess the child's feeding and provide appropriate counseling to the mother* - Refer for further assessment including ART** - Advise the mother on home care - Follow-up in 14 days, then monthly for 3 months and then every 3 months or as per immunization schedule**
CONFIRMED HIV INFECTION	yellow
SUSPECTED SYMPTOMATIC HIV INFECTION	<ul style="list-style-type: none"> - Treat, counsel and follow-up for common and opportunistic infections - Give cotrimoxazole prophylaxis - Give Vitamin A supplements every 6 months beginning at the age of 6 months - Assess the child's feeding and provide appropriate counseling to the mother* - Test to confirm HIV infection - Advise the mother on home care - Follow-up in 14 days, then monthly for 3 months and then every 3 months or as per immunization schedule**
POSSIBLE HIV INFECTION / HIV EXPOSED	yellow
SYMPTOMATIC HIV INFECTION UNLIKELY	<ul style="list-style-type: none"> - Treat, counsel and follow-up existing infections - Advise the mother about feeding and about her own health - Encourage HIV testing
HIV INFECTION UNLIKELY	green

* Module 3 provides detailed information on assessing feeding and counseling the mother about feeding and about her own health.

** Module 4 provides more detailed information on chronic care including ART and follow-up of HIV infected young infants and children.

5.2 TREATMENT FOR THE SICK YOUNG INFANT

Turn to the HIV algorithm in your chart booklet and read through how you should treat the sick young infant who has been classified for HIV infection.

The boxes below remind you of the **TREAT** charts in the IMCI algorithm.

CLASSIFY	IDENTIFY TREATMENT	
CONFIRMED HIV INFECTION	<ul style="list-style-type: none"> ➤ Give cotrimoxazole prophylaxis from age 4-6 weeks ➤ Assess the child's feeding and counsel as necessary ➤ Refer for assessment for ART ➤ Advise the mother on home care ➤ Follow-up in 14 days 	yellow
POSSIBLE HIV INFECTION OR HIV EXPOSED	<ul style="list-style-type: none"> ➤ Give cotrimoxazole prophylaxis from age 4-6 weeks ➤ Assess the child's feeding and give appropriate feeding advice ➤ Follow-up in 14 days ➤ Confirm infant's / child's HIV status as soon as possible from 6 weeks; do a HIV virological test if less than 18 months of age or HIV antibody test after 18 months of age 	yellow
HIV INFECTION UNLIKELY	<ul style="list-style-type: none"> ➤ Treat, counsel and follow-up existing infections ➤ Advise the mother about feeding and about her own health 	green

5. How would you treat a child with the classifications: PERSISTENT DIARRHOEA and CONFIRMED HIV INFECTION?

6. How would you treat a child with the classifications: PNEUMONIA (no wheezing present), PERSISTENT DIARRHOEA, DYSENTRY, CHRONIC EAR INFECTION, VERY LOW WEIGHT and CONFIRMED HIV INFECTION?

In section 4, you learnt how to assess and classify the young infant and child for HIV, and in Section 5 you learnt how to identify treatment for the young infant and child classified for HIV. In the following three sections you will learn how to assess, classify and treat young infants and children with suspected or confirmed HIV infection:

- acute common illnesses (section 6.0)
- opportunistic infections (section 7.0), including:
 - skin problems,
 - mouth problems and
 - other opportunistic infections
- And prevent opportunistic infections and other common illnesses (section 8.0):
 - provide cotrimoxazole prophylaxis
 - Vitamin A supplementation

6.0 ASSESS, CLASSIFY, AND TREAT FOR ACUTE COMMON ILLNESSES

Check ALL sick young infants and children aged 2 months up to 5 years for general danger signs. Refer to your IMCI chart booklet for a list of these general danger signs.

The box below indicates which children require urgent referral and which children require non-urgent referral to the hospital:

<i>SIGNS INDICATING</i>	<i>SIGNS / CONDITIONS INDICATING</i>
URGENT REFERRAL	NON - URGENT REFERRAL
<p>Young infants aged 1 week up to 2 months: Infant with a SEVERE (pink / red) classification</p> <p>Children aged 2 months up to 5 years:</p> <ul style="list-style-type: none"> • With a general danger sign <i>or</i> • a SEVERE (pink / red classification) 	<p>Young infants aged 1 week up to 2 months: If young infant is classified as POSSIBLE HIV INFECTION / HIV EXPOSED refer for HIV virological testing, if available.</p> <p>Children aged 2 months up to 5 years:</p> <ul style="list-style-type: none"> • For confirmatory HIV testing if this cannot be done on site • Sick child's condition is the same on follow-up • Cough for more than 30 days

It is important to note that common acute illnesses in young infants and children with suspected or confirmed HIV infection can usually be managed according to the IMCI guidelines, for example malaria, diarrhoea, pneumonia and ear infection.

In the case of MALNUTRITION, you should be aware of the following special considerations:

- Young infants and children with suspected or confirmed HIV infection are prone to all forms of MALNUTRITION. Therefore during each follow-up visit you must assess and classify the child for malnutrition using the IMCI malnutrition and anaemia charts (page 6 of IMCI chart booklet). You must plot the child's weight on a weight chart to identify growth faltering and allow prompt nutritional intervention before the infant is malnourished
- You will also need to identify and counsel the mother on feeding problems at a very early stage before they lead to malnutrition (Chart Booklet p XX).
- Follow the IMCI chart booklet for managing a child with SEVERE MALNUTRITION, VERY LOW WEIGHT OR NOT VERY LOW WEIGHT.

In addition, you will need to provide the following special care:

- If the child fails to gain weight or loses weight between monthly measurements, take a detailed health and feeding history from the mother. If this history does not indicate an obvious explanation for VERY LOW WEIGHT, despite treatment, refer the child for investigation.
- Some children will have severe malnutrition (severe wasting or generalized oedema) not due to HIV or other infections but due to lack of adequate nutrition. Counsel the mother using the IMCI feeding recommendations. You will learn more about this in Module 3.

In the case of PNEUMONIA in HIV infected children (aged 2 months up to 5 years), additional management is required:

CLASSIFICATION	ADDITIONAL MANAGEMENT NEEDED
PNEUMONIA	<ul style="list-style-type: none">➤ If the child has been on cotrimoxazole prophylaxis, use oral amoxicillin as the first line treatment for PNEUMONIA➤ If not taking co-trimoxazole prophylaxis, you may treat the pneumonia with co-trimoxazole but also remember to initiate the prophylaxis➤ If, on follow-up after 2 days the child's condition is unchanged, refer

7.0 ASSESS, CLASSIFY AND TREAT FOR OPPORTUNISTIC INFECTIONS

Children infected with HIV have weakened immune systems, which means they develop opportunistic infections more easily. Some of these opportunistic infections present as severe pneumonia, diarrhoea and febrile illnesses and therefore you will need to refer them to hospital. Other opportunistic illnesses may be managed at your level, for example mouth problems or skin problems.

When assessing for other problems remember to ask about skin and mouth problems in children that are classified as “POSSIBLE HIV INFECTION or HIV EXPOSED”, or “CONFIRMED HIV INFECTION” or “SUSPECTED SYMPTOMATIC HIV INFECTION”.

If you are unsure about a particular skin or mouth problem, then refer the child to second level for assessment and treatment.

7.1 ASSESS, CLASSIFY AND TREAT FOR SKIN PROBLEMS

Children classified as CONFIRMED HIV INFECTION or SUSPECTED SYMPTOMATIC HIV INFECTION or POSSIBLE HIV INFECTION / HIV EXPOSED may have skin problems.

Turn to the tables on skin problems in your chart booklet and read the section on how to identify skin problems. *Note* that children may have more than one skin problem; therefore the tables on skin problems do not follow the standard IMCI classification principles¹.

¹ IMCI classification principles : classification in the pink row denotes serious illness and requires referral, yellow means that the child requires appropriate treatment, green means that the child does not require specific medical attention, just advice to the mother

7.1.1 Identify skin problem if skin is itching

(see photo booklet section 1 and chart booklet on page 44)

SIGNS	CLASSIFY AS	TREATMENT	HIV features
Itching rash with small papules and scratch marks. Dark spots with pale centres	PAPULAR ITCHING RASH (PRURIGO)	<ul style="list-style-type: none"> ➤ Treat itching ➤ Can be an early sign of HIV and needs assessment for HIV 	<ul style="list-style-type: none"> ➤ A clinical stage 2 disease
An itchy circular lesion with a raised edge and fine scaly area in centre with loss of hair. May also be found on body or web of feet.	RINGWORM (TINEA)	<ul style="list-style-type: none"> ➤ Whitfield's ointment or other anti-fungal cream if few patches ➤ If extensive give or refer for ketoconazole or griseofulvin ➤ If in hairline, shave hair ➤ Treat itching 	<ul style="list-style-type: none"> ➤ Fungal nail infection is a clinical stage 2 disease
Rash and excoriations on torso; burrows in web space and wrist. Face spared.	SCABIES	<ul style="list-style-type: none"> ➤ Manage with anti-scabies ➤ Treat itching 	<ul style="list-style-type: none"> ➤ May manifest as crusted scabies in HIV infected children

Anti-scabies treatment

Treat with one of the following:	Treatment period:	Warnings: <i>For all treatments – will initially itch more (as mites dies and lead to inflammatory response) then itch goes away.</i>
1% Lindane (gamma benzene hexachloride) cream or lotion	once – wash off after 24 hours (after 12 hours in children)	potentially toxic if overused; avoid in pregnancy and small children
25% benzyl benzoate emulsion Dilute 1:1 for children, Dilute 1:3 for infants	At night, wash off in morning – repeat x 3 ? (variable recommendations)	tendency to irritate skin
5% permethrin cream		expensive, very low systemic absorption and toxicity.

Treat Itching

- Calamine lotion *or*
- Oral antihistamine
- If not improved, consider topical steroids

Recommended dosages for ketoconazole:

Age of child		Dose, frequency and duration
2 months up to 12 months	(3- < 6kg)	20mg once daily
	(6- < 10kg)	40mg once daily
12 months up to 5 years	(10-19kg)	60mg once daily

Recommended dosages for griseofulvin:

Age of child		Dose, frequency and duration
2 months up to 12 months	(3- < 6kg)	10m g/kg/day: <i>for example</i> for 3kg baby – 30mg; for 6kg baby – 60mg – once a day
	(6- < 10kg)	10 mg/kg/day once a day
12 months up to 5 years	(10-19kg)	10mg/ kg/day once a day

7.1.2 Identify skin problem if skin has blisters / sores / pustules

(see photo booklet section 2 and chart booklet page 45)

SIGNS	CLASSIFY AS	TREATMENT	HIV FEATURES
Vesicles over the entire body, with occasional involvement of mucosa. Vesicles appear progressively over days and form scabs after they rupture.	CHICKEN POX	<ul style="list-style-type: none"> ➤ Treat itching ➤ Refer URGENTLY if pneumonia or jaundice occur 	<ul style="list-style-type: none"> ➤ More severe and extensive in immuno-compromised child
Vesicles in one area on one side of body with intense pain or scars plus shooting pain. Herpes zoster is uncommon in children except where they are immuno-compromised, for example if infected with HIV	HERPES ZOSTER	<ul style="list-style-type: none"> ➤ Keep lesions clean and dry. Use local antiseptic ➤ If eye involved give acyclovir. ➤ Give pain relief ➤ Follow-up in 7 days if sores are not fully healed 	<ul style="list-style-type: none"> ➤ Vesicles become haemorrhagic ➤ Stage 2 disease
Vesicular lesion or sores, also involving lips and / or mouth	HERPES SIMPLEX	<ul style="list-style-type: none"> ➤ If child unable to feed, refer ➤ If first episode or severe ulceration, give acyclovir 	<ul style="list-style-type: none"> ➤ Can become extensive with serious mouth ulcerations ➤ If > 1 month, stage 4 disease
Red, tender, warm crusts or small lesions	IMPETIGO OR FOLLICULITIS	<ul style="list-style-type: none"> ➤ Clean sores with antiseptic ➤ Drain pus if fluctuance ➤ Start cloxacillin if size >4cm or red streaks or tender nodes or multiple abscesses for 5 days ➤ Follow-up in 2 days ➤ Refer URGENTLY if child has fever and/or if infection extends to the muscle 	

Recommended dosages for cloxacillin / flucloxacillin:

Weight of child	Form	Dose, every 6 hours for 5 days
3- <6kg	250 mg capsule	½ tablet
6- <10kg		1 tablet
10- <15kg		1 tablet
15- <20kg		2 tablet

Drug-related skin rashes

(see photo booklet section 5 and chart booklet page 49)

Drug-related skin rashes are common in children with HIV infection. Study the **photographs in the photograph booklet** to identify common drug-related rashes, including fixed drug eruptions, eczema and Steven's Johnson syndrome (SJS) with target lesions/bullae/skin sloughing, involves mucosal surfaces including the mouth and the eyes. As this condition is life-threatening, such a patient must be referred urgently.

You will read about the management of these drug reactions when they occur following use of antiretroviral drugs in module 4.

SIGNS	CLASSIFY AS	TREATMENT	HIV FEATURES
Generalised red, widespread with small bumps or blisters; or one or more dark skin areas (fixed drug reaction)	FIXED DRUG REACTION²	<ul style="list-style-type: none"> ➤ Stop medications ➤ Give oral antihistamine ➤ If peeling rash (as a result of severe reaction, for example Steven Johnson syndrome with involvement of eyes and / or mouth, or child has difficulty breathing, refer urgently 	Could be a sign of a drug reaction due to ARV's
Wet, oozing sores or excoriated, thick patches.	ECZEMA	<ul style="list-style-type: none"> ➤ Soak sores with clean water to remove crusts (no soap) ➤ Dry the skin gently ➤ Short-term: use topical steroid cream (not on face) ➤ Treat itching 	
Skin problem limited to area in contact with a problem substance Early: blistering and red Later: thick, dry and scaly	CONTACT DERMATITIS	<ul style="list-style-type: none"> ➤ Hydrocortisone 1% ointment ➤ If severe reaction with blisters, exudates or oedema, refer <p>Find and remove the causal substance from the reach of the child</p>	
Severe reaction due to co-trimoxazole or ARV's such as NVP or EFV involving the skin as well as the eyes and or mouth. Might cause difficulty breathing	STEVENS-JOHNSON SYNDROME	<ul style="list-style-type: none"> ➤ Stop medication ➤ REFER URGENTLY to hospital 	Also a rare but fatal reaction to ARV's and co-trimoxazole.

² See below for more information about drug reactions

7.1.3 Identify skin problem if child has skin rash with no or few symptoms (see photo booklet section 3 and chart booklet p.46)

SIGNS	CLASSIFY AS:	TREATMENT	HIV FEATURES
<p>Small (2-3mm) raised bumps with a little dimple at the top, usually located around the eyes.</p> <p>However, they may be wide-spread and severe in children (and adults) with HIV infection.</p>	<p>MOLLUSCUM CONTAGIOSUM</p>	<ul style="list-style-type: none"> ➤ It is best to avoid any treatment. ➤ Refer if extensive and severe 	<ul style="list-style-type: none"> ➤ Increased incidence. ➤ Giant molluscum may be seen. ➤ Extensive molluscum is a stage 2 disease
<p>HIV infected children may present with flat warts which may be localised or generalised, or with large genital warts</p>	<p>WARTS</p>	<ul style="list-style-type: none"> ➤ Refer if the warts are extensive and severe 	<ul style="list-style-type: none"> ➤ More numerous lesions ➤ A stage 2 disease
<p>Greasy scales and redness on central face, scalp, body folds, including napkin area and chest.</p> <p>Seborrheic dermatitis may be severe in HIV infected children.</p> <p>Secondary bacterial infection may be common</p>	<p>SEBORRHEA</p>	<ul style="list-style-type: none"> ➤ Ketoconazole shampoo (alternative: keratolytic shampoo with salicylic acid or selenium sulfide or coal tar). Repeated treatment may be necessary. ➤ If severe, refer <p>For seborrheic dermatitis:</p> <ul style="list-style-type: none"> ➤ treat with 1% hydrocortisone cream twice daily or aqueous cream. ➤ If the dermatitis is severe, refer 	<ul style="list-style-type: none"> ➤ Seborrheic dermatitis could be severe in HIV infected children

7.2 ASSESS, CLASSIFY AND TREAT FOR MOUTH PROBLEMS

7.2.1 Thrush

Open the photograph booklet section 4: Look at the pictures of oral and oesophageal thrush. See also the chart booklet on pages 46-47.

Thrush is common in people with HIV infection. You may see mild white patches on the oral mucosa or extensive infection of the pharynx and oesophagus. These patches have a reddish base when scraped. Children with severe thrush infection have difficulty swallowing.

SIGNS	CLASSIFY AS	TREATMENTS	
Not able to swallow	SEVERE OESOPHAGEAL THRUSH	<ul style="list-style-type: none"> ➤ Refer URGENTLY to hospital. ➤ If not able to refer, give fluconazole. ➤ If mother is breastfeeding check and treat the mother for breast thrush. 	red
Pain or difficulty in swallowing	OESOPHAGEAL THRUSH	<ul style="list-style-type: none"> ➤ Give fluconazole. ➤ Give oral care to young infant or child. ➤ If mother is breastfeeding check and treat the mother for breast thrush. ➤ Follow up in 2 days. ➤ Tell the mother when to come back immediately. ➤ Once stabilized, refer for ART initiation 	yellow
White patches in mouth which can be scraped off	ORAL THRUSH	<ul style="list-style-type: none"> ➤ Treat thrush and the associated feeding problems according to IMCI (Chart Booklet p.10). ➤ Counsel the mother on home care for oral thrush. The mother should: <ul style="list-style-type: none"> ○ Wash her hands ○ Wash the young infant / child's mouth with a soft clean cloth wrapped around her finger and wet with salt water ○ Instill 1ml nystatin four times per day or paint the mouth with half strength gentian violet for 7 days ○ Wash her hands after providing treatment for the young infant or child ○ Avoid feeding for 20 minutes after medication ➤ If breastfed, check mother's breasts for thrush. If present (dry, shiny scales on nipple and areola), treat with nystatin or GV ➤ Advise the mother to wash breasts after feeds. If bottle fed, advise to change to cup and spoon ➤ If severe, recurrent or pharyngeal thrush, consider symptomatic HIV ➤ Give paracetamol if needed for pain 	yellow
White lesions on the side of the tongue	ORAL HAIRY LEUCOPLAKIA	<ul style="list-style-type: none"> ➤ Does not independently require treatment, but resolve with ART and acyclovir 	yellow

7.2.2 Mouth ulcer or gum problems

SIGNS	CLASSIFY AS	TREATMENTS
<ul style="list-style-type: none"> ▪ Deep or extensive ulcers of mouth or gums <i>or</i> ▪ Not able to eat 	SEVERE GUM OR MOUTH INFECTION	<ul style="list-style-type: none"> ➢ Refer URGENTLY to hospital ➢ If possible, give first dose acyclovir pre-referral. ➢ Start metronidazole if referral not possible. ➢ If child is on antiretroviral therapy this may be a drug reaction so refer to second level for assessment.
<ul style="list-style-type: none"> ▪ Ulcers of mouth or gums 	GUM / MOUTH ULCERS	<ul style="list-style-type: none"> ➢ Show mother how to clean the ulcers with saline or peroxide or sodium bicarbonate. ➢ If lips or anterior gums involved, give acyclovir, if possible. If not possible, refer. ➢ If child receiving cotrimoxazole or antiretroviral drugs or isoniazid (INH) prophylaxis (for TB) within the last month, this may be a drug rash, especially if the child also has a skin rash, so refer. ➢ Provide pain relief. ➢ Follow up in 7 days.

Recommended dosages of acyclovir:

Age of child	Dose, frequency and duration
<2 years	200mg 8 hourly for 5 days
>2 years	400mg 8 hourly for 5 days

Fluconazole dosage

Weight of child	Nystatin		
	50mg/5ml oral suspension	50 mg capsule	Oral suspension 100,000 units/ml
3-<6kg	-	-	1-2ml four times per day for all age groups
6-<10kg	-	-	
10-<15kg	5ml once a day	1	
15-<20kg	7.5ml once a day	1-2	
20-29kg	12.5ml once a day	2-3	



SHORT ANSWER EXERCISE E

Answer the following questions individually, and then discuss in plenary with the facilitator:

1. How would you treat a child with the classification: POSSIBLE HIV INFECTION, VERY LOW WEIGHT and GUM / MOUTH ULCERS?
2. How would you treat a child with the classifications: IMPETIGO, NOT VERY LOW WEIGHT and POSSIBLE HIV INFECTION?
3. How would you treat a child with ORAL THRUSH?
4. How would you treat a child with HERPES ZOSTER?

Your facilitator will now lead you in a drill on assessing and treating skin and mouth infections:

Drill: assessing and treating skin and mouth infections

QUESTIONS	ANSWERS
The presence of which drug-related rashes are an indication for referral	
What are the signs of Herpes Simplex?	
What are the signs of Herpes zoster?	
How will you recognise a drug rash?	
How would you recognise molluscum contagiosum?	
How would you treat molluscum contagiosum?	
How would you recognise seborrhoea?	
How would you treat warts?	
How would you recognise oesophageal thrush and what treatment would you give?	

8.0 PREVENTION OF ILLNESS

8.1 PROVIDE COTRIMOXAZOLE PROPHYLAXIS

Infants and children with suspected or confirmed HIV infection may acquire severe pneumonia and other serious infections at an early age. Often this occurs before their HIV status has been confirmed.

A serious life threatening form of pneumonia caused by an organism called pneumocystis (jirovecii previously carinii), is commonly called PCP.

Regular prophylaxis with Trimethoprim-sulfamethoxazole (TMP/SMX - also known as cotrimoxazole) provides a simple, inexpensive and effective strategy to prevent illness. Cotrimoxazole prophylaxis, in certain groups of children with suspected or confirmed HIV infection will decrease sickness and death due to PCP and other common bacterial infections and malaria.

Cotrimoxazole prophylaxis is still very important even with increasing access to ART, and it improves survival even where ART is not used reducing mortality of HIV infected children by up to 40%.

Cotrimoxazole prophylaxis is one of the medications a child exposed or confirmed to HIV will need to take for a long time. To make sure the caretaker and /or the child are able to adhere to cotrimoxazole, they will need counselling and support. Several counseling sessions will be required in order to ensure that the issue of prophylaxis has been discussed with the caretaker and that they have fully understood and agreed to adhere to the treatment. You will learn more about long term care in Module 4 of this course and in the basic ART course of IMAI.

The details for cotrimoxazole prophylaxis in HIV-exposed infants are summarized below³.

³ Revised WHO guidelines for cotrimoxazole prophylaxis in HIV-exposed and HIV-infected children in resource-limited countries, Geneva, May 10-12, 2005

8.1.1 WHICH CHILDREN SHOULD RECEIVE COTRIMOXAZOLE PROPHYLAXIS?

- All young infants classified as POSSIBLE HIV INFECTION / HIV EXPOSED.
- All children with confirmed HIV infection and aged less than 12 months.
- All children age 12 months up to 5 years with confirmed HIV infection and WHO stage 2 / 3/ 4 or CD4<25% (regardless of whether child is on ART or not).
- Any child aged 2 months up to 5 years classified as SUSPECTED SYMPTOMATIC HIV INFECTION (as efforts are being made to confirm HIV infection).

(You will learn more about ART and the WHO stages in Module 4).

8.1.2 WHEN SHOULD COTRIMOXAZOLE PROPHYLAXIS BE STARTED?

- From 4-6 weeks in all young infants classified as POSSIBLE HIV INFECTION / HIV EXPOSED.
- As soon as possible in the following groups of children:
 - Any child aged 2 months up to 5 years classified as SUSPECTED SYMPTOMATIC HIV INFECTION.
 - Any child with presumptive HIV infection (clinical symptoms suggestive of HIV but no confirmatory HIV results yet).
 - All children aged 12 months up to 5 years with confirmed HIV infection and WHO stage 2 / 3/ 4 or CD4<25% (regardless of whether child is on ART or not).
 - Children age 6 years or older follow adult recommendations.
- If the HIV-infected child qualifies for cotrimoxazole and ART simultaneously, start cotrimoxazole first

8.1.3 WHEN SHOULD COTRIMOXAZOLE PROPHYLAXIS BE STOPPED?

- 1) In children classified as POSSIBLE HIV INFECTION / HIV EXPOSED or SUSPECTED SYMPTOMATIC HIV INFECTION, stop co-trimoxazole only when HIV infection has been definitively ruled out AND the mother is no longer breastfeeding.
- 2) Severe toxicity such as Steven Johnson syndrome or exfoliative dermatitis or severe pallor. This child should be referred to second level for assessment and for an alternate drug. If you are unsure about whether to stop cotrimoxazole, refer the child to second level for assessment and advice.
- 3) In the absence of data, it is recommended that infants with confirmed HIV infection in resource limited settings should continue co-trimoxazole indefinitely; however in the child who receives ART for more than 12 months, discontinuation may be considered if:
 - CD4 results are greater than 25% (1-4 years) or adult threshold (>5 years).
 - Evidence of good adherence and secure access to ART is demonstrated AND
 - No WHO stage 2, 3, or 4 conditions.

NB. Children over 5 years but who started cotrimoxazole during infancy, irrespective of whether they receive ART should continue co-trimoxazole. Children over 5 years who started co-trimoxazole during infancy may follow adult guidelines.

8.1.4 WHAT DOSE OF COTRIMOXAZOLE SHOULD BE USED FOR PROPHYLAXIS?

Drug: Cotrimoxazole (Trimethoprim-sulfamethoxazole or TMP/SMX)

Available in the following formulations:

- Syrup: 40mg TMP/200mg SMX per 5 ml
- Adult Tablet: single strength 80 TMP/400mg SMX
- Paediatric Tablet: single strength 20mg TMP/100mg SMX

Cotrimoxazole dosage - single dose per day			
Age	5ml Syrup 40mg/200mg	Single Strength Adult Tablet 80 mg/400mg	Single Strength Paediatric Tablet 20 mg/100mg
Less than 6 months	2.5ml		1 tablet
6 months up to 5 years	5 ml	1/2 tablet	2 tablets
5 – 14 years	10 ml	1 tablet	4 tablets
> 15 years	NIL	2 tablets	-

The facilitator will now take you through the following drill:

Drill: Co-trimoxazole

QUESTIONS	ANSWERS
1. Which children should receive cotrimoxazole prophylaxis?	
2. At what age should co-trimoxazole prophylaxis be started?	
3. What are the serious side effects of co-trimoxazole prophylaxis?	
Drill on co-trimoxazole dosage: <i>List the dosages applicable to the following children:</i>	
Child's age	Daily dose
4. 6 weeks old	
5. 4 years old	
6. 6 months old	
7. 12 months old	
8. 15 months old	
9. 5 years old	

8.2 IMMUNISATION

- HIV-exposed children should receive all vaccines, including Hib, as early in life as possible, according to nationally recommended immunization schedules.
- As for any severely ill child at the time of immunization, severely ill HIV-infected children should NOT be vaccinated.
- Children with suspected or confirmed HIV infection should receive measles vaccine at six months of age with a second dose as soon after nine months of age as possible.
- In countries with high TB prevalence, bacille Calmette-Guérin (BCG) vaccine is recommended for all children at birth or as soon as possible thereafter (in accordance with standard policies). In countries with low TB prevalence, BCG vaccine should not be given to children living with HIV/AIDS (HIV-infected children). If early BCG is missed in children then BCG should not be given to children with symptomatic HIV infection. In asymptomatic children, the decision to give late BCG should be based on the local risk of tuberculosis.
- Infants with symptomatic HIV infection should NOT receive yellow fever vaccines.

8.3 VITAMIN A SUPPLEMENTATION

Young infants and children infected with HIV should follow the same Vitamin A supplementation protocol as for uninfected young infants and children. It is best that the Vitamin A doses are synchronised with immunisation visits or campaigns. The recommended doses of vitamin A supplementation for the prevention of vitamin A deficiency are indicated in the following table:

Target group	Immunization contact	Vitamin A dose IU (international units)
All mothers irrespective of their mode of infant feeding up to six weeks postpartum if they have not received vitamin A supplementation after delivery	BCG, OPV-0 or DTP-1 contact up to six weeks	200 000 IU
Infants aged 9–11 months Children aged 12 months and older	Measles vaccine contact	100 000 IU 200 000 IU
Children aged 1–4 years	Booster doses* Special campaigns* Delayed primary immunization doses*	200 000 IU

A dose should not be given too soon after a previous dose of vitamin A supplement: the minimum recommended interval between doses for the prevention of vitamin A deficiency is one month (the interval can be reduced in order to treat clinical vitamin A deficiency and measles cases). However, the optimal interval between doses is four to six months.



WRITTEN EXERCISE C

Take out the recording forms that you used for written exercises A and B in Module 1.

Write down the additional treatment needed for Mishu, Dan, Ebai and Henri based on the HIV classifications allocated to them in Exercise B of Module 1.

9.0 SUMMARY OF MODULE AND CLOSING

The facilitator will now ask you to briefly summarize what topics have been covered by Module 2. Participants should call out what this module has taught you and the facilitator will list your responses on a flipchart.

Look back to the learning objectives for the module and provide your feedback as to whether you feel that these objectives have been met.

You should highlight any difficult areas, where you need further clarification and ask final questions.

You have now completed Module 2 and are ready to proceed to Module 3 which provides a broad overview of counselling the HIV positive mother.

For further information please contact:

Department of Child and Adolescent Health and Development (CAH)

World Health Organization
20 Avenue Appia
1211 Geneva 27
Switzerland

Tel +41-22 791 3281

Fax +41-22 791 4853

email cah@who.int

web site <http://www.who.int/child-adolescent-health>

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