



# IMCI

INTEGRATED MANAGEMENT  
OF CHILDHOOD ILLNESS

DISTANCE LEARNING COURSE

## Module 5

### Fever



World Health  
Organization

WHO Library Cataloguing-in-Publication Data:

Integrated Management of Childhood Illness: distance learning course.

15 booklets

Contents: – Introduction, self-study modules – Module 1: general danger signs for the sick child – Module 2: The sick young infant – Module 3: Cough or difficult breathing – Module 4: Diarrhoea – Module 5: Fever – Module 6: Malnutrition and anaemia – Module 7: Ear problems – Module 8: HIV/AIDS – Module 9: Care of the well child – Facilitator guide – Pediatric HIV: supplementary facilitator guide – Implementation: introduction and roll out – Logbook – Chart book

1.Child Health Services. 2.Child Care. 3.Child Mortality – prevention and control. 4.Delivery of Health Care, Integrated. 5.Disease Management. 6.Education, Distance. 7.Teaching Material. I.World Health Organization.

ISBN 978 92 4 150682 3

(NLM classification: WS 200)

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Printed in Switzerland

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## Acknowledgements

The WHO Department of Maternal, Newborn, Child and Adolescent Health initiated the development of these distance learning materials on the Integrated Management of Childhood illness (IMCI), in an effort to increase access to essential health services and meet demands of countries for materials to train primary health workers in IMCI at scale. These materials are intended to serve as an additional tool to increase coverage of trained health workers in countries to support the provision of basic health services for children. The technical content of the modules are based on new WHO guidelines in the areas of pneumonia, diarrhoea, febrile conditions, HIV/AIDS, malnutrition, newborn sections, infant feeding, immunizations, as well as care for development.

Lulu Muhe of the WHO Department of Maternal, Newborn, Child and Adolescent Health (MCA) led the development of the materials with contributions to the content from WHO staff: Rajiv Bahl, Wilson Were, Samira Aboubaker, Mike Zangenberg, José Martines, Olivier Fontaine, Shamim Qazi, Nigel Rollins, Cathy Wolfheim, Bernadette Daelmans, Elizabeth Mason, Sandy Gove, from WHO/Geneva as well as Teshome Desta, Sirak Hailu, Iriya Nemes and Theopista John from the African Region of WHO.

A particular debt of gratitude is owed to the principal developer, Ms Megan Towle. Megan helped in the design and content of the materials based on the field-test experiences of the materials in South Africa. A special word of thanks is also due to Gerry Boon, Elizabeth Masetti and Lesley Bamford from South Africa and Mariam Bakari, Mkasha Hija, Georgina Msemo, Mary Azayo, Winnie Ndembeka and Felix Bundala, Edward Kija, Janeth Casian, Raymond Urassa from the United Republic of Tanzania

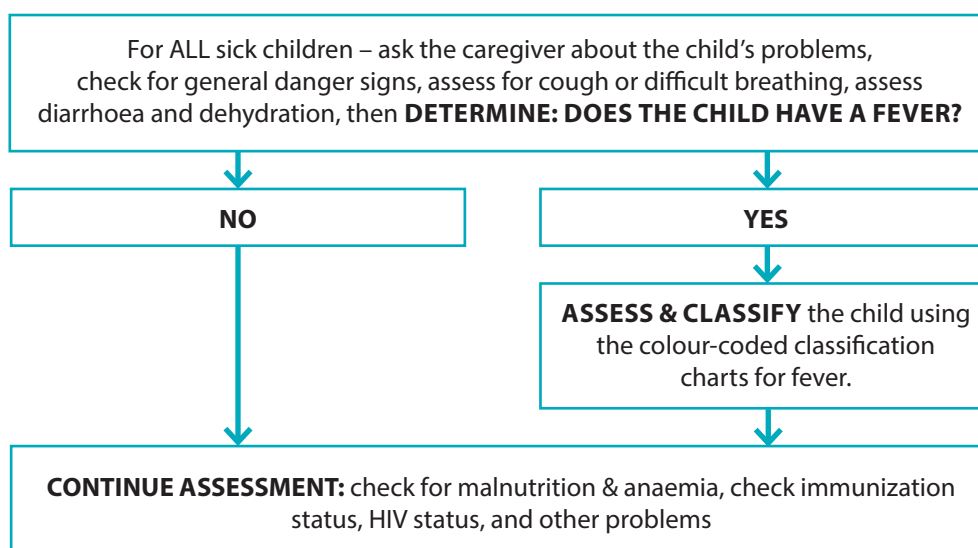
WHO is grateful for the contribution of all external experts to develop the distance learning approaches for IMCI including professor Kevin Forsyth, Professor David Woods, Prof S. Neirmeyer. WHO is also grateful to Lesley-Anne Long of the Open University (UK), Aisha Yousafzai who reviewed the care for development section of the well child care module, Amha Mekasha from Addis Ababa University and Eva Kudlova, who have contributed to different sections of the distance learning modules.

We acknowledge the help from Ms Sue Hobbs in the design of the materials.

Financial and other support to finish this work was obtained from both the MCA and HIV departments of WHO.

## 5.1 MODULE OVERVIEW

**A fever can have many causes.** Fever can be the only sign of a sick child, or it may be combined with other problems. It is important to keep the big picture in mind as you manage the child with fever. You will have to do a careful assessment to determine how serious the problem is. This module will teach you how to do this assessment.



## MODULE LEARNING OBJECTIVES

*After you study this module, you will be able to:*

- ✓ Determine if a child has fever by measuring temperature, history, or feeling
- ✓ Determine a child's malaria risk
- ✓ Recognize the clinical signs of severe febrile disease
- ✓ Identify clinical signs of measles and complications from measles
- ✓ Classify fever using IMCI charts
- ✓ Classify measles and measles with complications
- ✓ Give oral antimalarials
- ✓ Give appropriate treatments for measles
- ✓ Counsel on home treatment and follow-up care for children with fever
- ✓ Provide follow-up to children with fever

## YOUR RECORDING FORM

Look at your IMCI recording form for the sick child. This section deals with this module:

<b>DOES THE CHILD HAVE FEVER? (by history/feels hot/temperature 37.5°C or above)</b> Decide malaria risk: High ___ Low ___ No ___ • For how long? ___ Days • If more than 7 days, has fever been present every day? • Has child had measles within the last 3 months? Do malaria test if NO general danger sign High risk: all fever cases Low risk: if NO obvious cause of fever Test POSITIVE? P. falciparum P. vivaxNEGATIVE?		Yes ___ No ___
<b>If the child has measles now or within the last 3 months:</b>		
• Look or feel for stiff neck • Look for runny nose • Look for signs of MEASLES: ◦ Generalized rash and ◦ One of these: cough, runny nose, or red eyes • Look for any other cause of fever.		
• Look for mouth ulcers. ◦ If yes, are they deep and extensive? • Look for pus draining from the eye. • Look for clouding of the cornea.		

## MODULE ORGANIZATION

*This module follows the major steps of the IMCI process:*

- ✓ Assess fever
- ✓ Classify fever
- ✓ Treat fever
- ✓ Counsel caregiver on home care
- ✓ Follow-up care for fever
- ✓ Module contents

## BEFORE YOU BEGIN

### What do you know now about managing fever?

Before you begin studying this module, quickly practice your knowledge with these multiple-choice questions.

**Circle the best answer for each question.**

- Which of the following children has a fever that requires further investigation?
  - Imrana has an axillary temperature of 37 °C
  - Joy's mother says she has been feeling very hot for the past three days
  - Samuel's face is very flushed and red
- What are common causes of fever that often kill children?
  - Local infection and malaria
  - Meningitis and influenza
  - Measles and malaria

3. What would you give to children with high fever?
  - a. Paracetamol
  - b. Amoxicillin or another antibiotic
  - c. Fluids
4. What is recommended treatment for malaria?
  - a. Chloroquine
  - b. Artemisinin-based combination therapies
  - c. Paracetamol
5. Traci has a fever, generalized rash, runny nose, and mouth ulcers. How you would you classify?
  - a. She shows signs local infections of the skin
  - b. She shows clinical signs of AIDS
  - c. Measles with mouth complications

**After you finish the module, you will answer the same questions. This will demonstrate to you what you have learned during the course of the module!**

## 5.2 INTRODUCTION TO FEVER

Now you will consider a typical case that you might see in your practice – imagine the situation. This will help you start thinking about the problem of a child with a fever.

### ■ OPENING CASE STUDY – SAMI

It is a hot day in your clinic, and the waiting room is crowded with mothers. Miriam comes into your clinic with her son, Sami. He has been complaining of being “hot” for a few days, she says.

Sami sits next to Miriam but does not look very energetic. He is a quiet boy, and when you ask him how he is feeling, he puts his head into his mother’s skirt. He continues to lie on her lap and looks unwell. You are not yet sure if he is feeling unwell because of the heat, or if he has a fever. You know there are several causes for fever.

### WHEN DOES A CHILD HAVE THE MAIN SYMPTOM FEVER?

The child has a history of fever

- The child feels hot
- The child has an axillary (underarm) temperature of 37.5 °C (38 °C rectal) or above

### WHAT CAUSES FEVER IN CHILDREN?

A child with fever may have malaria, measles or another severe disease – like meningitis, septicaemia and very severe pneumonia.

**Signs of some very severe diseases may be general and non-specific.** For a health worker it is very important to identify key symptoms and signs of the diseases that may cause the child’s death very quickly. Therefore all sick children with those signs should be referred to the hospital for further assessment and treatment.

**Other bacterial infections causing fever** include pneumonia, acute ear infection, streptococcal sore throat, dysentery, local bacterial infection, typhoid, and urinary tract infection. Or, a child with fever may have a simple cough or cold or other viral infection.

**All health workers should know how to assess a child for common childhood causes of fever: malaria and measles.** These are two major killers of children under five in the world. In malaria risk areas, malaria is still a major cause of fever and death in children although measles has been on the decline due to successful measles immunization.

**Malaria and measles** are common causes of fever, and two major killers of children.



## WHAT CAUSES MALARIA?

Malaria is caused by **parasites** in the blood called **plasmodia**. These parasites are transmitted when an infected female anopheline mosquitoes bite humans. Four species of plasmodia can cause malaria. The most dangerous type is **Plasmodium falciparum**. Signs of falciparum malaria include shivering, sweating and vomiting. Another parasite species that commonly causes malaria is called **Plasmodium vivax**. This rarely causes very severe illness or death, but Plasmodium vivax contributes to malaria morbidity in some countries.

Malaria may occur throughout the year or during the rainy season in some countries.

**It is important to know which species of *Plasmodium* is in your country and area of work.  
It is also important to know when during the year it occurs.**

## HOW CAN MALARIA CAUSE ILLNESS AND DEATH IN CHILDREN?

**In areas with very high malaria transmission, malaria is a major cause of death in children.** A case of uncomplicated malaria can develop into severe malaria as soon as 24 hours after the fever first appears. Severe malaria is malaria with complications such as cerebral malaria, severe anaemia, or presence of any other general danger sign. The child can die if he or she does not receive urgent treatment.

## WHAT ARE SIGNS OF MALARIA?

**Fever is the main symptom of malaria.** It can be present all of the time, or it can go away and return at regular intervals.

**Signs of malaria can overlap with signs of other illnesses.** For example:

- ✓ A child may have malaria and a cough with fast breathing, a sign of pneumonia. This child needs treatment for both malaria and pneumonia.
- ✓ Children with malaria may also have diarrhoea. They need an antimalarial and treatment for the diarrhoea.
- ✓ A child with malaria may have chronic anaemia (with no fever) as the only sign of illness. You will read more about anaemia in MODULE 6.

## HOW DO YOU CONFIRM MALARIA?

If a child has a fever due to malaria, malaria parasites or malaria antigens should be present in the blood when it is tested to confirm malaria infection.

If the child does not have malaria parasites present, then it is unlikely that the fever is due to malaria. The child should be assessed for other possible causes of fever.

### How do you determine fever?

- History of fever
- Feels hot
- Axillary temperature 37.5 °C or above

## BESIDES MALARIA, WHAT ARE OTHER CAUSES OF FEVER?

If a child with fever does not show signs of malaria parasites, it is unlikely that the fever is not due to malaria. The child should be assessed for other possible cause of fever.

**There are three major categories of children with fever:**

### 1. FEVER WITH LOCALISING SIGNS

A child might have an apparent bacterial cause of fever such as pneumonia, dysentery, acute ear infection, sore throat, meningitis, and local infection that has localising signs. Signs of local infection may be refusal to use a limb, hot tender swelling, tenderness, or red tender skin.

### 2. FEVER WITHOUT LOCALISING SIGNS

A child might also have fever due to bacterial infection with no localising signs like septicaemia, typhoid fever, urinary tract infection, HIV infection and miliary tuberculosis. These infections are difficult to diagnose without use of laboratory tests and therefore children suspected of having these conditions should be referred to hospital for assessment.

### 3. FEVER WITH A RASH

Fever with a rash is commonly caused by measles. It can also be other simple viral infections, or infections like meningococcal meningitis and dengue haemorrhagic fever.

## WHAT CAUSES MEASLES?

Measles is caused by a virus that infects the skin and layer of cells that line the lung, gut, eye, mouth, and throat.

**Measles is highly infectious. Most cases occur in children between 6 months and 2 years of age.** The measles virus damages the immune system for many weeks after the onset of measles. This leaves the child at risk for other infections. Complications of measles occur in about 30% of all cases.

## WHAT ARE SIGNS OF MEASLES?

Fever and a generalized rash are the main signs of measles. Sometimes measles presents with eye and mouth complications.

## WHY DOES MEASLES CONTRIBUTE TO MALNUTRITION?

Measles contributes to malnutrition because it causes diarrhoea, high fever, and mouth ulcers. These problems interfere with feeding. Malnourished children are more likely to have severe complications due to measles. This is especially true for children who don't have enough vitamin A. One in ten severely malnourished children with measles may die. For this reason, it is very important to help the caregiver to continue to feed her child during measles.

### ■ How will you greet Miriam and begin the assessment?

You praise Miriam for bringing Sami to the clinic. You tell her that she has been attentive to listen to her son's complaints and to bring him in. She tells you Sami is 3 years old, so you know you will be using the sick child charts.

You ask her to tell you more about Sami's problem, "feeling hot," and what she has done for the problem so far. Miriam tells you that he handles the heat well, so you do not think that he is only talking about the heat outside. She says his body feels warm. She has tried to put cool, wet rags on his chest and head, she says, but they have not helped him.

You ask if this is the first time she is coming to the clinic for this, and she says yes. You take Sami's temperature under his armpit, and it is 38.6 degrees. He does have a fever, because his temperature is over 37.5 degrees. He weighs 12 kg.

### ■ Next, you will check for general danger signs:

You ask Miriam if Sami is able to eat and drink, and she says yes. She says he is not vomiting, and has not had convulsions. You watch Sami. He acts very tired – he continues to lay his head on his mother's lap – but he watches you as you talk. He holds the material of Miriam's skirt and plays with it. Does Sami have any general danger signs?

### ■ Next, you assess for cough or difficult breathing and diarrhoea:

You will now assess Sami for the first two main symptoms, cough or difficult breathing and diarrhoea. You ask Miriam if Sami has had a cough. She says no.

You ask if he has diarrhoea, and she says that he has been having loose stools. She says this has been a problem for the last week. You ask if there is blood in the stool and she says no.

Then you assess Sami's dehydration. Sami does not look restless or irritable. You look for sunken eyes, but Sami's look normal. You pour Sami a glass of water from a pitcher on the counter, and offer it to him. He is shy to take it, but Miriam asks him to take it and drink. He drinks eagerly. You ask Miriam to set Sami on the examination table and lay down with his hands to his sides. You tell them that you will pinch Sami's skin, but it will not hurt. The skin returns immediately.

### ■ How will you classify Sami's diarrhoea and dehydration?

You classify that Sami does not have persistent diarrhoea (lasting longer than 14 days) or dysentery (blood in the stools).

Sami has diarrhoea, but not enough signs to classify any dehydration. You determine that you will counsel Miriam on Plan A for home treatment of diarrhoea.

## How will you complete Sami's recording form thus far?

Name: <i>Sami</i>		Age: <i>3 years</i>	Weight (kg): <i>12 kg</i>	Temperature (°C): <i>38.6 °C</i>
Ask: What are the child's problems? <b>ASSESS</b> (Circle all signs present) <i>Feels hot</i>		Initial Visit? <i>X</i>	Follow-up Visit?	
<b>CHECK FOR GENERAL DANGER SIGNS</b>				<b>CLASSIFY</b>
<ul style="list-style-type: none"> <li>NOT ABLE TO DRINK OR BREASTFEED</li> <li>VOMITS EVERYTHING</li> <li>CONVULSIONS</li> <li>LETHARGIC OR UNCONSCIOUS</li> <li>CONVULSING NOW</li> </ul>				General danger sign present? Yes ___ No <i>X</i> <b>Remember to use Danger sign when selecting classifications</b>
<b>DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING?</b>				Yes ___ No <i>X</i>
<ul style="list-style-type: none"> <li>For how long? ___ Days</li> <li>Count the breaths in one minute ___ breaths per minute. Fast breathing?</li> <li>Look for chest indrawing</li> <li>Look and listen for stridor</li> <li>Look and listen for wheezing</li> </ul>				
<b>DOES THE CHILD HAVE DIARRHOEA?</b>				Yes <i>X</i> No ___
<ul style="list-style-type: none"> <li>For how long? <i>7</i> Days</li> <li>Is there blood in the stool?</li> <li>Look at the child's general condition. Is the child:               <ul style="list-style-type: none"> <li>Lethargic or unconscious?</li> <li>Restless and irritable?</li> </ul> </li> <li>Look for sunken eyes.</li> <li>Offer the child fluid. Is the child:               <ul style="list-style-type: none"> <li><i>Not able to drink or drinking poorly?</i></li> <li><i>Drinking eagerly, thirsty?</i></li> </ul> </li> <li>Pinch the skin of the abdomen. Does it go back:               <ul style="list-style-type: none"> <li>Very slowly (longer than 2 seconds)?</li> <li>Slowly?</li> </ul> </li> </ul>				<i>Diarrhoea, no dehydration</i> <i>(Plan A)</i>

## Now you will learn to assess Sami for the next main symptom, fever.

This was also his complaint, and you have already determined by taking his temperature that he has a fever.

### 5.3 ASSESS A CHILD FOR FEVER

First, determine if the child has a fever.

**A child has the symptom of fever if:**

- Has a history of fever
- Feels hot
- Has an axillary (underarm) temperature of 37.5 °C (38 °C rectal) or above

If you do not have a thermometer, feel the child's stomach or axilla (underarm) and determine whether the child feels hot. Ask the caregiver: "Does the child have fever?" The child has a history of fever if the child has had any fever with this illness.

History of fever is enough to assess the child. If the child has a history of fever, you will assess even if his current temperature is not 37.5 °C or above, or he does not feel hot now. If the child has no fever, ask about the next main symptom, ear problem.

#### HOW WILL YOU ASSESS?

**NO fever**, ask about the next main symptom using the IMCI process.

**YES fever is present, you will assess in three parts:**

1. Determine if malaria risk is high or low
2. Assess for causes of fever
3. Assess for complications from measles, if child shows signs of measles or has had measles

**Open your chart booklet to the ASSESS chart for fever.** The top part of the box describes how to assess for causes of fever. These include signs of malaria, measles, meningitis and other causes. The bottom part of the box describes how to assess the child for signs of measles complications, if the child has measles now or within the last 3 months.

## HOW WILL YOU ASSESS FOR CAUSES OF FEVER?

You will now read about assessing for causes of fever, the top part of the ASSESS chart:

<b>If yes:</b> Decide Malaria Risk: high or low	
<b>Then ask:</b>	<b>Look and feel:</b>
<ul style="list-style-type: none"> <li>• For how long?</li> <li>• If more than 7 days, has fever been present every day?</li> <li>• Has the child had measles within the last 3 months?</li> </ul>	<ul style="list-style-type: none"> <li>• Look or feel for stiff neck.</li> <li>• Look for runny nose.</li> <li>• Look for any other cause of fever**.</li> <li>• Look for signs of MEASLES.               <ul style="list-style-type: none"> <li>◦ Generalized rash and</li> <li>◦ One of these: cough, runny nose, or red eyes.</li> </ul> </li> </ul>
<b>Do a malaria test: If NO general danger sign or stiff neck</b>	
<ul style="list-style-type: none"> <li>• In all fever cases if <u>High malaria risk</u>.</li> <li>• In <u>Low malaria risk</u> if no obvious cause of fever present.</li> </ul>	

## MALARIA RISK

### HOW WILL YOU DECIDE MALARIA RISK?

To classify and treat children with fever, you must know the malaria risk in your area. Most national malaria control programmes define areas of malaria risk as follows:

- **HIGH MALARIA RISK:** in area where **more than 5% of fever cases** in children 2 to 59 months are attributable to malaria.
- **LOW MALARIA RISK:** in area where **fewer than 5% of fever cases** in children 2 to 59 months are attributable to malaria, but where the risk is not negligible.
- **NO MALARIA RISK:** malaria transmission does not normally occur in the area, and imported malaria is uncommon.

### HOW IS MALARIA RISK DETERMINED?

Malaria risk depends on:

- How prevalent malaria is in your area – this is called malaria endemicity
- Extent of malaria control in the country

Risk also varies by:

- Region, because malaria risk can change across a local area or across a country
- Season, because the breeding conditions for mosquitoes are limited or absent during the dry season, and as a result, malaria risk is usually low during dry season

## WHAT IS THE MALARIA RISK IN YOUR AREA?

**Find out the risk of malaria for your area.** If the risk changes according to season, be sure you know when the malaria risk is high and when the risk is low. If you do not have information telling you that the malaria risk is low in your area, always assume that children under 5 years of age who have fever are at high risk for malaria.

**ASK the caregiver: “Has the child travelled during the past two weeks and, if so, where?”** Some families in low risk areas may have travelled to areas where there is a malaria risk. If a caregiver in a low malaria risk area tells you she has travelled with the child to an area where you know there is a high malaria risk, you will assess the child according to a high risk area.

### WHAT IS THE MALARIA RISK IN YOUR AREA?

Does it change by season?

Are there other nearby regions that people travel to that have a higher malaria risk?

## WHY DOES MALARIA RISK MATTER FOR IMCI?

Depending on the local malaria risk, you may do a malaria test for the child. It is not possible to clinically distinguish fever caused by malaria from other causes of fever because there are many causes of fever. **To be sure that a child with a fever or history fever has a malaria infection, you need to do a malaria test.**

To avoid a large number of children being treated for malaria when in fact they have another febrile illness, children should first be tested for malaria to determine treatment. Testing for malaria will also help to distinguish malaria caused by *P. falciparum* or *P. vivax*. As you learned earlier, *P. falciparum* is more dangerous.

### WHEN WILL YOU DO A MALARIA TEST: HIGH MALARIA RISK?

Here the chance of the child's fever attributable to malaria is very high. **A malaria test should be done in all children with a fever or history of fever with no general danger sign or stiff neck.** Do not do a malaria test if a child has a danger to avoid delay in referral but give pre-referral antimalarial and antibiotic treatment, and refer urgently.

### WHEN WILL YOU DO A MALARIA TEST: LOW MALARIA RISK?

The chance of malaria causing the child's fever is low. There is an even lower chance of malaria if the child has signs of another infection that can cause fever. **A malaria test should be done if the child with fever has no general danger signs and no apparent cause of fever.**

## HOW WILL DETERMINE WHICH MALARIA TEST TO USE?

There are two ways of doing a malaria test:

1. Examining a **blood slide** for malaria parasites using a microscope
2. Using a **Rapid Diagnostic Test (RDT)** to check blood for malaria antigens

## HOW WILL YOU RECORD A MALARIA TEST RESULT?

To do a malaria test, take a blood smear if you have a microscope in the clinic, or check the blood by using an RDT. The malaria test result will determine whether a child has malaria parasites requiring treatment or not. Always check the quality of your blood slides if using microscopy or RDTs to ensure that the test results are reliable.

Circle the results of the test on the recording form:

- **POSITIVE** – if there are malaria parasites or RDT is positive. Note if it is *P. falciparum* or *P. vivax* if able to do so especially when using microscopy.
- **NEGATIVE** – If there are no parasites seen by microscopy, or RDT is negative

## CAUSES OF FEVER

### ASK: HOW LONG HAS THE CHILD HAD FEVER?

Most fevers due to viral illnesses go away within a few days. If the fever has been present for more than 7 days, ask if the fever has been present every day. **A fever that has been present every day for more than 7 days can mean that the child has a more severe disease such as typhoid fever. Refer this child for further assessment.**

### ASK: HAS THE CHILD HAD MEASLES WITHIN THE LAST 3 MONTHS?

Measles damages the child's immune system and leaves the child at risk for other infections for many weeks. A child with fever and a history of measles within the last 3 months may have an infection, such as an eye infection, due to complications of measles.

### LOOK OR FEEL FOR STIFF NECK

A stiff neck may be a sign of meningitis, cerebral malaria or another very severe febrile disease. **It requires urgent treatment with injectable antibiotics and referral to a hospital.**

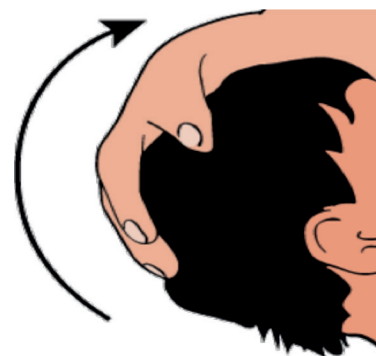
**WATCH THE CHILD:** While you talk with the caregiver during the assessment, look to see if the child moves and bends his or her neck easily when looking around. If the child is moving and bending his or her neck, the child does not have a stiff neck.

**TEST THE CHILD:** If you did not see any movement, or if you are not sure, draw the child's attention to his or her umbilicus or toes. For example, you can shine a flashlight on the toes or umbilicus or tickle the toes to encourage the child to look down. Look to see if the child can bend his or her neck when looking down at his or her umbilicus or toes.



**FEEL FOR STIFF NECK:** If you still have not seen the child bend his or her neck himself, ask the caregiver to help you lay the child on his or her back. Lean over the child, gently support the child's back and shoulders with one hand. With the other hand, hold the child's head.

Then carefully bend the head forward towards the child's chest. If the neck bends easily, the child does not have stiff neck. If the neck feels stiff and there is resistance to bending, the child has a stiff neck. Often a child with a stiff neck will cry when you try to bend the neck.



### DVD EXERCISE – NECK STIFFNESS

Watch “Assess neck stiffness” (disc 2). It is very useful to practice with a video. Record your answers as you watch, and the video will review them. Do these children have stiff necks?

**CHILD 1** ☐ YES ☐ NO

**CHILD 2** ☐ YES ☐ NO

**CHILD 3** ☐ YES ☐ NO

**CHILD 4** ☐ YES ☐ NO

### LOOK FOR RUNNY NOSE

When malaria risk is low, a child with fever and an obvious cause of fever like a runny nose (common cold), pneumonia or ear infection does not need a malaria test. This child's fever is probably caused by a common cold or pneumonia or ear infection.

### LOOK FOR OTHER SIGNS OF FEVER

Assess the child for signs of other non-apparent bacterial infection. Look for local tenderness, oral sores, refusal to use a limb, hot tender swelling, red tender skin or boils, lower abdominal pain, or pain on passing urine in older children.

### LOOK FOR SIGNS SUGGESTING MEASLES

There are two categories of signs suggesting measles. First, the child should have a **generalized rash**. They should also show one of the following: **cough, runny nose, or red eyes**.

#### Generalized rash

In measles, a red rash begins behind the ears and on the neck. It spreads to the face. During the next day, the rash spreads to the rest of the body, arms and legs. After 4 to 5 days, the rash starts to fade and the skin may peel.

Some children with severe infection may have more rash spread over more of the body. The rash becomes more discoloured (dark brown or blackish), and there is more peeling of the skin. A measles rash does not have vesicles (blisters) or pustules. The rash does not itch.

Do not confuse measles with other common childhood rashes such as chicken pox, scabies, or heat rash. *Chicken pox rash* is a generalized rash with vesicles. *Scabies* occurs on the hands, feet, ankles, elbows, buttocks and axilla (underarm). It also

itches. *Heat rash* can be a generalized rash with small bumps and vesicles, which itch. A child with heat rash is not sick.

### Cough, runny nose, or red eyes

To classify a child as having measles, the child with fever must have a generalized rash AND one of the following signs: cough, runny nose, or red eyes.

The child has “red eyes” if there is redness in the white part of the eye. In a healthy eye, the white part of the eye is clearly white and not discoloured.



#### Watch “Assess and classify fever” (disc 2)

This video reviews all steps of assessing fever. IMPORTANT: note that this video does not include a malaria test. Doing a malaria test with microscopy or RDT is a recent technical update.

## COMPLICATIONS FROM MEASLES

### WHEN WILL YOU ASSESS FOR COMPLICATIONS FROM MEASLES?

If the child **has measles now** or **has had measles within the last 3 months**, you will assess if the child has mouth or eye complications.

This assessment follows instructions on the lower portion of the fever ASSESS chart:

**If the child has measles now or within the last 3 months:**

- Look for mouth ulcers. Are they deep and extensive?
- Look for pus draining from the eye.
- Look for clouding of the cornea.

### WHAT ARE MEASLES WITH COMPLICATIONS?

Children with measles may have other serious complications of measles. Measles complications can lead to severe disease and death. **Classifying complications will allow you to better treat the child with measles.**

Complications include stridor in a calm child, severe pneumonia, severe dehydration, or severe malnutrition. Some complications of measles are due to bacterial infections. Others are due to the measles virus, which causes damage to the respiratory and intestinal tracts. Vitamin A deficiency contributes to some of the complications such as corneal ulcer. Any vitamin A deficiency is made worse by the measles infection.

Now you will learn about assessing for these clinical signs.

## LOOK FOR MOUTH ULCERS

Look inside the child's mouth for mouth ulcers. Ulcers are painful open sores on the inside of the mouth and lips or the tongue. They may be red or have white coating.

**In severe cases, they are deep and extensive.** A child with measles who has mouth ulcers will find it difficult to drink or eat.

**Mouth ulcers are different than the small spots called Koplik spots.** Koplik spots occur in the mouth inside the cheek during early stages of the measles infection. Koplik spots are small, irregular, bright red spots with a white spot in the centre. They do not interfere with drinking or eating. They do not need treatment.



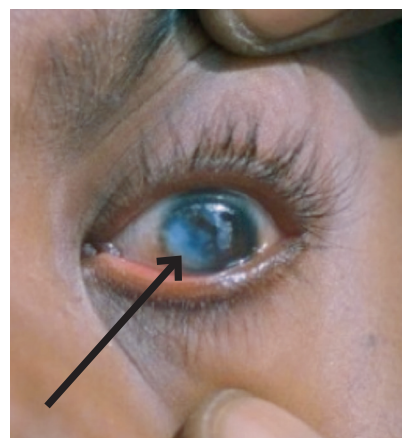
## LOOK FOR CLOUDING OF THE CORNEA

The cornea is usually clear. When clouding of the cornea is present, the cornea may appear clouded or hazy. The cornea may look the way a glass of water looks when you add a small amount of milk. The clouding may occur in one or both eyes.

**Corneal clouding is a dangerous condition.** It may be the result of vitamin A deficiency that has been made worse by measles. If the corneal clouding is not treated, the cornea can ulcerate and cause blindness. **A child with clouding of the cornea needs urgent treatment with vitamin A.**

A child with corneal clouding may keep his or her eyes tightly shut when exposed to light. The light may cause irritation and pain to the child's eyes. To check the child's eye, wait for the child to open his or her eye. Or gently pull down the lower eyelid to look for clouding.

**If there is clouding of the cornea, ask the caregiver how long the clouding has been present.** If the caregiver is certain that clouding has been there for some time, ask if the clouding has already been assessed and treated at the hospital. If it has, you do not need to refer this child again for corneal clouding.



## LOOK FOR PUS DRAINING FROM THE EYE

Pus draining from the eye is a sign of conjunctivitis. Conjunctivitis is an infection of the conjunctiva, the inside surface of the eyelid and the white part of the eye.

**If you do not see pus draining from the eye, look for pus on the conjunctiva or on the eyelids.** Often the pus forms a crust when the child is sleeping and seals the eye shut. You can gently open the eye, making sure that your hands are clean.

Wash your hands after examining the eye of any child with pus draining from the eye.



### ■ How will you assess Sami for fever?

When you took Sami's temperature, you saw that he does have a temperature higher than normal, 38.6 °C. A fever is anything higher than 37.5 degrees. You ask Miriam about his symptoms. She tells you that Sami has been "hot". He does not have a history of fever.

### Sami has the symptom fever, so you will now assess for its causes.

First, you determine that Sami and his family live in a high risk malaria area. You ask how long Sami has been feeling hot, and Miriam says 2 days. This is under the 7 day threshold that may indicate a more serious disease, and would require referral.

You continue to watch Sami as he rests on his mother's lap. He is able to move his neck well. Just to check, you tap Sami's feet and ask him to look down. He bends his neck well to look down. Sami does not have a runny nose. You ask to examine him and survey his body for any signs of bacterial infection, like tenderness, swelling, or red skin. He has none.

Now you will do a malaria test. You remember that *all children in a high malaria risk area with a fever, without a general danger sign or stiff neck, should take a malaria test*. You have RDT available at the clinic. Sami's test is positive for *P. falciparum*. This is the more dangerous parasite. You mark this on his recording form.

You ask Miriam if Sami has had measles within the past three months. She does not understand when you ask about measles, so you explain some of the symptoms – a rash, runny nose, or red eyes, for example. She has already mentioned that Sami has not had a cough. She says no, he has not shown any of these signs. If Sami did show signs of measles today, or Miriam reported that he has had measles within the past three months, you would have assessed for complications affecting his eyes or mouth. You would have assessed for mouth ulcers, clouded cornea, and pus draining from the eye.

### ■ How will you record your assessment on Sami's form?

<b>DOES THE CHILD HAVE FEVER? (by history/feels hot/temperature 37.5°C or above)</b> Decide malaria risk: High <u>X</u> Low ___ No ___ • For how long? <u>2</u> Days • If more than 7 days, has fever been present every day? • Has child had measles within the last 3 months? Do malaria test if NO general danger sign High risk: all fever cases Low risk: if NO obvious cause of fever Test POSITIVE? <u>P. falciparum</u> P. vivaxNEGATIVE?		Yes <u>X</u> No ___  <i>Malaria RDT positive</i> <i>(P. falciparum)</i>
<b>If the child has measles now or within the last 3 months:</b>	• Look or feel for stiff neck • Look for runny nose • Look for signs of MEASLES: ◦ Generalized rash and ◦ One of these: cough, runny nose, or red eyes • Look for any other cause of fever.  • Look for mouth ulcers. ◦ If yes, are they deep and extensive? • Look for pus draining from the eye. • Look for clouding of the cornea.	

You will now learn how to classify Sami's fever.

## 5.4 CLASSIFY FEVER

If the child has fever and no signs of measles, classify the child for fever only. If the child has signs of both fever and measles, classify the child for fever **and** for measles.

### CAUSES OF FEVER

#### HOW DO YOU CLASSIFY FEVER?

You will classify based on the signs you have assessed, and the results of the malaria test if you conducted. There are three classifications for fever. These are:

1. VERY SERIOUS FEBRILE DISEASE
2. MALARIA
3. FEVER: NO MALARIA

<ul style="list-style-type: none"> <li>Any general danger sign or</li> <li>Stiff neck.</li> </ul>	<b>Pink:</b> <b>VERY SEVERE FEBRILE DISEASE</b>	<ul style="list-style-type: none"> <li>Give first dose of artesunate or quinine for severe malaria</li> <li>Give first dose of an appropriate antibiotic</li> <li>Treat the child to prevent low blood sugar</li> <li>Give one dose of paracetamol in clinic for high fever (38.5°C or above)</li> <li>Refer <b>URGENTLY</b> to hospital</li> </ul>
<ul style="list-style-type: none"> <li>Malaria test POSITIVE.***</li> </ul>	<b>Yellow:</b> <b>MALARIA</b>	<ul style="list-style-type: none"> <li>Give recommended first line oral antimalarial</li> <li>Give one dose of paracetamol in clinic for high fever (38.5°C or above)</li> <li>Advise mother when to return immediately</li> <li>Follow-up in 3 days if fever persists</li> <li>If fever is present every day for more than 7 days, refer for assessment</li> </ul>
<ul style="list-style-type: none"> <li>Malaria test NEGATIVE and/or</li> <li>Other cause of fever PRESENT.</li> </ul>	<b>Green:</b> <b>FEVER: NO MALARIA</b>	<ul style="list-style-type: none"> <li>Give one dose of paracetamol in clinic for high fever (38.5°C or above)</li> <li>Give appropriate treatment for any other cause of fever</li> <li>Advise mother when to return immediately</li> <li>Follow-up in 3 days if fever persists</li> <li>If fever is present every day for more than 7 days, refer for assessment</li> </ul>

#### VERY SEVERE FEBRILE DISEASE (RED)

A child with fever and any **general danger sign** or a **stiff neck** should be classified as having very severe febrile disease. A child with fever and any general danger sign or stiff neck may have meningitis, sepsis, or severe malaria (including cerebral malaria) if there is malaria risk. It is not possible to distinguish between these severe diseases without laboratory tests.

#### What are your actions?

A child classified as having very severe febrile disease needs **urgent pre-referral treatment and referral**. You will learn about pre-referral treatment in the next section.

### MALARIA (YELLOW)

A child with a fever, a positive malaria test, and **NO** general danger sign or stiff neck is classified as having MALARIA. This is the same for both high and low risk malaria areas.

#### What are your actions?

It is critical to provide antimalarial treatment for the child. You will also give paracetamol for high fever. This child should be followed up in 3 days. Remember that if the fever has been present for longer than 7 days, the child should be referred.

### FEVER: NO MALARIA (GREEN)

In a low malaria risk area, a child with a **malaria test negative** or **no other clinical signs** of other possible infection is classified as having FEVER: NO MALARIA.

#### What are your actions?

If the child's fever is 38.5 °C, give paracetamol. You will also treat for any other causes of fever. If the fever has been present every day for more than 7 days, refer for assessment. If the fever persists for 2 days, the caregiver should return.



### SELF-ASSESSMENT EXERCISE A

Answer the questions below about assessing and classifying fever.

1. Should all children with a fever be classified for fever?

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2. When will you conduct a malaria test?

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3. Which signs indicate that a child has VERY SEVERE FEBRILE DISEASE?

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4. Reba has a positive *P. vivax* test and no general danger signs or stiff neck. She has a temperature of 38 degrees Celsius.

- a. How will you classify?

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- b. Reba requires oral antimalarials and paracetamol. TRUE or FALSE

5. TRUE or FALSE: a child lives in a low malaria risk area. You will never need to conduct a malaria test for this child.

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## MEASLES & COMPLICATIONS

### HOW DO YOU CLASSIFY MEASLES?

You previously learned that a child who has a fever and measles now or within the last 3 months is classified both for fever and measles. Open your classification chart for measles:

<ul style="list-style-type: none"> <li>Any general danger sign or</li> <li>Clouding of cornea or</li> <li>Deep or extensive mouth ulcers.</li> </ul>	<b>Pink:</b> <b>SEVERE COMPLICATED MEASLES****</b>	<ul style="list-style-type: none"> <li>Give Vitamin A treatment</li> <li>Give first dose of an appropriate antibiotic</li> <li>If clouding of the cornea or pus draining from the eye, apply tetracycline eye ointment</li> <li>Refer URGENTLY to hospital</li> </ul>
<ul style="list-style-type: none"> <li>Pus draining from the eye or</li> <li>Mouth ulcers.</li> </ul>	<b>Yellow:</b> <b>MEASLES WITH EYE OR MOUTH COMPLICATIONS****</b>	<ul style="list-style-type: none"> <li>Give Vitamin A treatment</li> <li>If pus draining from the eye, treat eye infection with tetracycline eye ointment</li> <li>If mouth ulcers, treat with gentian violet</li> <li>Follow-up in 3 days</li> </ul>
<ul style="list-style-type: none"> <li>Measles now or within the last 3 months.</li> </ul>	<b>Green:</b> <b>MEASLES</b>	<ul style="list-style-type: none"> <li>Give Vitamin A treatment</li> </ul>

### SEVERE COMPLICATED MEASLES (RED)

A child with any general danger sign, clouding of cornea, or deep or extensive mouth ulcers should be classified as having SEVERE COMPLICATED MEASLES.

#### What are your actions?

This child needs urgent treatment and referral to hospital. Before referral, the child requires Vitamin A treatment and the first dose of an appropriate oral antibiotic. If there is clouding of the cornea, or pus draining from the eye, apply tetracycline ointment. If it is not treated, corneal clouding can result in blindness. Ask the caregiver if the clouding has been present for some time, and if it was assessed and treated at the hospital. If it was, you do not need to refer the child again for this eye sign.

### MEASLES WITH EYE OR MOUTH COMPLICATIONS (YELLOW)

If the child has pus draining from the eye, or mouth ulcers that are not deep or extensive, classify the child as having MEASLES WITH EYE OR MOUTH COMPLICATIONS.

#### What are your actions?

A child with this classification does not need referral. However, early identification and treatment of measles complications can prevent many deaths. Treat the child with vitamin A. It will help correct any vitamin A deficiency and decrease the severity of the complications. Teach the caregiver to treat the child's eye infection or mouth ulcers at home. Treating mouth ulcers helps the child resume normal feeding more quickly.



## MEASLES (GREEN)

A child with measles now or within the last 3 months and with none of the complications listed in the top or middle row of the table is classified as MEASLES. Give the child vitamin A to help prevent measles complications. All children with measles should receive vitamin A.

### ■ How will you classify Sami's fever?

You assessed that Sami had a fever by taking his temperature, which was 38.6 degrees. You know his family lives in a high risk area, so you will use the **high malaria risk charts**.

Sami did not show signs of a stiff neck. He did not show any general danger signs when you checked him earlier. Sami had a positive malaria test with the RDT. He did not have a runny nose. He did not have any signs of other causes of fever. Miriam said that he has not had measles.

### ■ How will you classify Sami?

You classify Sami as having MALARIA. This classification identifies the appropriate treatments, which we will discuss in the next section.

**You will not need to classify Sami for measles.** This is because Miriam reported that Sami did not have measles within the past three months, and he did not show any signs of measles today.

Now you will practice assessing and classifying two case studies for fever and measles. You will be given an example case to review before you do the two exercises. Then you will learn about appropriate treatments for febrile disease, malaria, fever, complicated measles, and measles.



## SELF-ASSESSMENT EXERCISE B

Answer the questions below about assessing and classifying measles.

1. When should a child be classified for measles?

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2. When you assess a child with fever for measles, what signs will you look for?

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3. Allan has a fever and deep, extensive ulcers. How will you classify?

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4. Which signs indicate that a child has MEASLES WITH COMPLICATIONS?

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## SELF-ASSESSMENT EXAMPLE

**This example will show you how to assess and classify illness in a child with fever. After this example, you will have two self-assessment exercises to complete yourself.**

Paulo is 10 months old. He weighs 8.2 kg. His temperature is 37.5 °C. His mother says he has a rash and cough. The health worker checked Paulo for general danger signs. Paulo was able to drink, was not vomiting, did not have convulsions and was not lethargic or unconscious. The health worker next asked about Paulo's cough. The mother said Paulo had been coughing for 5 days. He counted 43 breaths per minute. He did not see chest indrawing. He did not hear stridor when Paulo was calm. Paulo did not have diarrhoea.

Next the health worker asked about Paulo's fever. The malaria risk is high. The mother said Paulo has felt hot for 2 days. Paulo did not have a stiff neck. He has had a runny nose with this illness, his mother said. Paulo had a positive RDT test for *P. falciparum* malaria parasites.

Paulo has a rash covering his whole body. Paulo's eyes were red. The health worker checked the child for complications of measles. There were no mouth ulcers. There was no pus draining from the eye and no clouding of the cornea.

### **1. To classify Paulo's fever, the health worker looked at the table for classifying fever:**

- He checked to see if Paulo had any of the signs in the pink row. He thought, "Does Paulo have any general danger signs? No, he does not. Does Paulo have a stiff neck? No, he does not. Paulo does not have any signs of VERY SEVERE FEBRILE DISEASE."
- Next, the health worker looked at the yellow row. He thought, "Paulo has a fever. His temperature measures 37.5 °C. He also has a history of fever because his mother says Paulo felt hot for 2 days. He classified Paulo as having MALARIA."

### **2. Because Paulo had a generalized rash and red eyes, Paulo has signs suggesting measles. To classify Paulo's measles, the health worker looked at the classification table for classifying measles:**

- He checked to see if Paulo had any of the signs in the pink row. He thought, "Paulo does not have any general danger signs. The child does not have clouding of the cornea. There are no deep or extensive mouth ulcers. Paulo does not have SEVERE COMPLICATED MEASLES."
- Next the health worker looked at the yellow row. He thought, "Does Paulo have any signs in the yellow row? He does not have pus draining from the eye. There are no mouth ulcers. Paulo does not have MEASLES WITH EYE OR MOUTH COMPLICATIONS."
- Finally the health worker looked at the green row. Paulo has measles, but he has no signs in the pink or yellow row. The health worker classified Paulo as having MEASLES.

### 3. Here is how the health worker recorded Paulo's case information and signs of illness.

Name: *Paulo*Age: *10 mo*Weight (kg): *8.2 kg*Temperature (°C): *37.5 °C*Ask: What are the child's problems? *Rash, cough*Initial Visit? *X*

Follow-up Visit?

ASSESS (Circle all signs present)

CLASSIFY

<b>CHECK FOR GENERAL DANGER SIGNS</b> <ul style="list-style-type: none"> <li>• NOT ABLE TO DRINK OR BREASTFEED</li> <li>• VOMITS EVERYTHING</li> <li>• CONVULSIONS</li> <li>• LETHARGIC OR UNCONSCIOUS</li> <li>• CONVULSING NOW</li> </ul>	General danger sign present? Yes ___ No <i>X</i> <b>Remember to use Danger sign when selecting classifications</b>
<b>DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING?</b> <ul style="list-style-type: none"> <li>• For how long? <i>4</i> Days</li> <li>• Count the breaths in one minute <i>43</i> breaths per minute. Fast breathing?</li> <li>• Look for chest indrawing</li> <li>• Look and listen for stridor</li> <li>• Look and listen for wheezing</li> </ul>	Yes <i>X</i> No ___ <i>cough or cold</i>
<b>DOES THE CHILD HAVE DIARRHOEA?</b> <ul style="list-style-type: none"> <li>• For how long? ___ Days</li> <li>• Is there blood in the stool?</li> <li>• Look at the child's general condition. Is the child:             <ul style="list-style-type: none"> <li>◦ Lethargic or unconscious?</li> <li>◦ Restless and irritable?</li> </ul> </li> <li>• Look for sunken eyes.</li> <li>• Offer the child fluid. Is the child:             <ul style="list-style-type: none"> <li>◦ Not able to drink or drinking poorly?</li> <li>◦ Drinking eagerly, thirsty?</li> </ul> </li> <li>• Pinch the skin of the abdomen. Does it go back:             <ul style="list-style-type: none"> <li>◦ Very slowly (longer than 2 seconds)?</li> <li>◦ Slowly?</li> </ul> </li> </ul>	Yes ___ No <i>X</i>
<b>DOES THE CHILD HAVE FEVER? (by history/feels hot/temperature 37.5°C or above)</b> Decide malaria risk: High <i>X</i> Low ___ No ___ <ul style="list-style-type: none"> <li>• For how long? <i>2</i> Days</li> <li>• If more than 7 days, has fever been present every day?</li> <li>• Has child had measles within the last 3 months?</li> </ul> Do malaria test if NO general danger sign High risk: all fever cases Low risk: if NO obvious cause of fever Test POSITIVE <i>P. falciparum</i> <i>P. vivax</i> NEGATIVE?	Yes <i>X</i> No ___ <i>Malaria</i>
<b>If the child has measles now or within the last 3 months:</b> <ul style="list-style-type: none"> <li>• Look for mouth ulcers.             <ul style="list-style-type: none"> <li>◦ If yes, are they deep and extensive?</li> </ul> </li> <li>• Look for pus draining from the eye.</li> <li>• Look for clouding of the cornea.</li> </ul>	<i>Measles</i>

#### Are there any parts of this form that are confusing to you?

Revisit the ASSESS section to review clinical signs. You learned that the first step is to determine the malaria risk. Then you will assess for causes of fever. If the child shows signs of measles, or has had measles within the past 3 months, you will assess for complications.

Revisit the CLASSIFY section to see how you will classify with different tables, depending on the malaria risk.



## SELF-ASSESSMENT EXERCISE C

**Record Kareem's signs and classify all signs assessed on the recording form. Kareem's case is from an area of high malaria risk.**

Kareem is 5 months old. He weighs 5.2 kg. His axillary temperature is 37.5 °C. His mother said he is not eating well. She said he feels hot, and she wants a health worker to help him. Kareem is able to drink, has not vomited, does not have convulsions, and is not lethargic or unconscious. Kareem does not have a cough, said his mother. He does not have diarrhoea.

Because Kareem's temperature is 37.5 °C and he feels hot, the health worker assessed Kareem further for signs related to fever. It is the rainy season, and the risk of malaria is high. The mother said Kareem's fever began 2 days ago. He has not had measles within the last 3 months. He does not have stiff neck, his nose is not runny, and there are no signs suggesting measles. He had a positive RDT test for *P. falciparum*.

## MANAGEMENT OF THE SICK CHILD AGED 2 MONTHS UP TO 5 YEARS

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Weight (kg): \_\_\_\_\_ Temperature (°C): \_\_\_\_\_  
 Ask: What are the child's problems? \_\_\_\_\_ Initial Visit? \_\_\_\_\_ Follow-up Visit? \_\_\_\_\_  
**ASSESS** (Circle all signs present) **CLASSIFY**

<b>CHECK FOR GENERAL DANGER SIGNS</b> <ul style="list-style-type: none"> <li>• NOT ABLE TO DRINK OR BREASTFEED</li> <li>• VOMITS EVERYTHING</li> <li>• CONVULSIONS</li> <li>• LETHARGIC OR UNCONSCIOUS</li> <li>• CONVULSING NOW</li> </ul>		General danger sign present? Yes ___ No ___ <b>Remember to use Danger sign when selecting classifications</b>
<b>DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING?</b> <ul style="list-style-type: none"> <li>• For how long? ___ Days</li> <li>• Count the breaths in one minute ___ breaths per minute. Fast breathing?</li> <li>• Look for chest indrawing</li> <li>• Look and listen for stridor</li> <li>• Look and listen for wheezing</li> </ul>		Yes ___ No ___
<b>DOES THE CHILD HAVE DIARRHOEA?</b> <ul style="list-style-type: none"> <li>• For how long? ___ Days</li> <li>• Is there blood in the stool?</li> <li>• Look at the child's general condition. Is the child:               <ul style="list-style-type: none"> <li>◦ Lethargic or unconscious?</li> <li>◦ Restless and irritable?</li> </ul> </li> <li>• Look for sunken eyes.</li> <li>• Offer the child fluid. Is the child:               <ul style="list-style-type: none"> <li>◦ Not able to drink or drinking poorly?</li> <li>◦ Drinking eagerly, thirsty?</li> </ul> </li> <li>• Pinch the skin of the abdomen. Does it go back:               <ul style="list-style-type: none"> <li>◦ Very slowly (longer than 2 seconds)?</li> <li>◦ Slowly?</li> </ul> </li> </ul>		Yes ___ No ___
<b>DOES THE CHILD HAVE FEVER? (by history/feels hot/temperature 37.5°C or above)</b> Decide malaria risk: High ___ Low ___ No ___ <ul style="list-style-type: none"> <li>• For how long? ___ Days</li> <li>• If more than 7 days, has fever been present every day?</li> <li>• Has child had measles within the last 3 months?</li> </ul> Do malaria test if NO general danger sign High risk: all fever cases Low risk: if NO obvious cause of fever Test POSITIVE? <i>P. falciparum</i> <i>P. vivax</i> NEGATIVE?		Yes ___ No ___
<b>If the child has measles now or within the last 3 months:</b> <ul style="list-style-type: none"> <li>• Look for mouth ulcers.               <ul style="list-style-type: none"> <li>◦ If yes, are they deep and extensive?</li> </ul> </li> <li>• Look for pus draining from the eye.</li> <li>• Look for clouding of the cornea.</li> </ul>		



## SELF-ASSESSMENT EXERCISE D

**Record Dolma's signs and classify all signs assessed on the recording form. Dolma's case is from an area of low malaria risk.**

Dolma is 12 months old. She weighs 7.2 kg. Her axillary temperature is 36.5 °C. Her mother brought Dolma to the health centre today because she feels hot. Dolma has no general danger signs. She does not have cough or difficult breathing. When asked about diarrhoea, the mother said, "Yes, Dolma has had diarrhoea for 2 to 3 days." She has not seen any blood in the stool. Dolma has not been lethargic or unconscious. Her eyes are not sunken. She drinks normally. Her skin pinch returns immediately.

The health worker said, "You brought Dolma today because she feels hot. I will check her for fever." The risk of malaria is low. Her mother said that Dolma has felt hot for 2 days. She has not had measles within the last 3 months. There is no stiff neck and no runny nose. Dolma has a dry, generalized rash. She also has red eyes. She has a negative malaria test.

## MANAGEMENT OF THE SICK CHILD AGED 2 MONTHS UP TO 5 YEARS

Name:

Age:

Weight (kg):

Temperature (°C):

Ask: What are the child's problems?

Initial Visit?

Follow-up Visit?

**ASSESS** (Circle all signs present)**CLASSIFY**

<b>CHECK FOR GENERAL DANGER SIGNS</b> <ul style="list-style-type: none"> <li>• NOT ABLE TO DRINK OR BREASTFEED</li> <li>• VOMITS EVERYTHING</li> <li>• CONVULSIONS</li> <li>• LETHARGIC OR UNCONSCIOUS</li> <li>• CONVULSING NOW</li> </ul>		General danger sign present? Yes ___ No ___ <b>Remember to use Danger sign when selecting classifications</b>
<b>DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING?</b> <ul style="list-style-type: none"> <li>• For how long? ___ Days</li> <li>• Count the breaths in one minute ___ breaths per minute. Fast breathing?</li> <li>• Look for chest indrawing</li> <li>• Look and listen for stridor</li> <li>• Look and listen for wheezing</li> </ul>		Yes ___ No ___
<b>DOES THE CHILD HAVE DIARRHOEA?</b> <ul style="list-style-type: none"> <li>• For how long? ___ Days</li> <li>• Is there blood in the stool?</li> <li>• Look at the child's general condition. Is the child:               <ul style="list-style-type: none"> <li>◦ Lethargic or unconscious?</li> <li>◦ Restless and irritable?</li> </ul> </li> <li>• Look for sunken eyes.</li> <li>• Offer the child fluid. Is the child:               <ul style="list-style-type: none"> <li>◦ Not able to drink or drinking poorly?</li> <li>◦ Drinking eagerly, thirsty?</li> </ul> </li> <li>• Pinch the skin of the abdomen. Does it go back:               <ul style="list-style-type: none"> <li>◦ Very slowly (longer than 2 seconds)?</li> <li>◦ Slowly?</li> </ul> </li> </ul>		Yes ___ No ___
<b>DOES THE CHILD HAVE FEVER? (by history/feels hot/temperature 37.5°C or above)</b> Decide malaria risk: High ___ Low ___ No ___ <ul style="list-style-type: none"> <li>• For how long? ___ Days</li> <li>• If more than 7 days, has fever been present every day?</li> <li>• Has child had measles within the last 3 months?</li> </ul> Do malaria test if NO general danger sign High risk: all fever cases Low risk: if NO obvious cause of fever Test POSITIVE? P. falciparum P. vivaxNEGATIVE?		Yes ___ No ___
<b>If the child has measles now or within the last 3 months:</b> <ul style="list-style-type: none"> <li>• Look for mouth ulcers.               <ul style="list-style-type: none"> <li>◦ If yes, are they deep and extensive?</li> </ul> </li> <li>• Look for pus draining from the eye.</li> <li>• Look for clouding of the cornea.</li> </ul>		

## 5.5 TREAT THE CHILD WITH FEVER

### HOW WILL YOU TREAT FEVER?

Return to your classification charts for fever and measles. What treatments do you see in the IDENTIFY TREATMENT columns?

**You will review several treatments for fever and malaria in this section:**

As you read more about each, follow along with your TREAT THE CHILD charts.

- ✓ Give quinine or artesunate for severe malaria
- ✓ Give paracetamol
- ✓ Give first-line oral antimalarials
- ✓ Give Vitamin A treatment

**Some treatments are require counselling the caregiver, so you'll read in the next section:**

- ✓ Apply eye ointment
- ✓ Treat with gentian violet

**You will see that some identified treatments that have been previously discussed:**

- ✓ Give antibiotics
- ✓ Treat for low blood sugar

### MALARIA

#### HOW WILL YOU GIVE QUININE OR ARTESUNATE FOR SEVERE MALARIA?

A child with VERY SEVERE FEBRILE DISEASE may have severe malaria. To kill malaria parasites as quickly as possible, give a quinine injection before referral.

**Artesunate suppositories are the preferred antimalarials because they are effective in most areas of the world and they act rapidly.**

Possible side effects of a quinine injection are a sudden drop in blood pressure, dizziness, ringing of the ears, and a sterile abscess. If a child's blood pressure drops suddenly, the effect stops after 15–20 minutes. Dizziness, ringing of the ears and abscess are of minor importance in the treatment of a very severe disease. Use the table in TREAT chart to determine the dose. Use the child's weight, if the child can be weighed.

## HOW WILL YOU GIVE FIRST-LINE ORAL ANTIMALARIALS FOR MALARIA?

**ACT** (*artemisinin-based combination therapies*) are recommended for treating malaria

**WHO now recommends the use of artemisinin-based combination therapies (ACT), which have been shown to improve treatment efficacy.** The advantages of ACT are that it can very quickly reduce the number of malarial parasites and improve the symptoms.

### WHAT ACTS ARE RECOMMENDED?

The antimalarials to be used for treatment of malaria will depend on the national policy guidelines. There are several ACT options available. Based on available data on safety, efficacy, and cost, the following therapies are recommended in prioritized order:

1. artemether-lumefantrine (Coartem™)
2. artesunate (3 days) plus amodiaquine
3. artesunate (3 days) plus SP in areas where SP efficacy remains high
4. SP plus amodiaquine in areas where efficacy of both amodiaquine and SP remain high (this is mainly limited to countries in West Africa).

You will now read the instructions and dosing for two common treatments – numbers 1 and 2 from above. This information is also in your Chart Booklet.

### ORAL ARTESUNATE – LUMEFANTRINE (AL)

1. **First dose in clinic:** Give the first dose of Artesunate – lumefantrine (AL) in the clinic and observe for one hour. If child vomits within an hour repeat the dose.
2. **Continued doses at home:** The second dose is given at home after 8 hours. Artesunate – lumefantrine (AL) should be taken with food. Then twice daily for further two days as shown below:

AL TABLETS (20 mg artemether and 120 mg lumefantrine)						
WEIGHT (age)	0h	8h	24h	36h	48h	60h
5–15 kg (2 mo under 3 years)	1	1	1	1	1	1
15–24 kg (4–8 years)	2	2	2	2	2	2
25–34 kg (9–14 years)	3	3	3	3	3	3
Over 34 kg (over 14 years)	4	4	4	4	4	4

**ORAL ARTESUNATE PLUS AMODIAQUINE (AS+AQ)**

This is currently available as a fixed-dose formulation with tablets containing 25/67.5 mg, 50/135 mg or 100/270 mg of artesunate and amodiaquine. Blister packs of separate scored tablets containing 50 mg of artesunate and 153 mg base of amodiaquine, respectively, are also available.

1. **First dose in clinic:** Give first dose in the clinic and observe for an hour, if a child vomits within an hour repeat dose.
2. **Continued doses at home:** The child will then require a dose every day for the following two days as per the table below using the fixed dose combination:

AS+AQ (Fixed Dose formulation tablets)			
WEIGHT (age)	DAY 1	DAY 2	DAY 3
5 up to 10 kg (2 mo up to 1 year)	1 tablet (25 mg AS/67.5 mg AQ)	1 tablet (25 mg AS/67.5 mg AQ)	1 tablet (25 mg AS/67.5 mg AQ)
10 up to 18 (1–5 years)	1 tablet (50 mg AS/135 mg AQ)	1 tablet (50 mg AS/135 mg AQ)	1 tablet (50 mg AS/135 mg AQ)
18 up to 36 kg (6–13 years)	1 tablet (100 mg AS/270 mg AQ)	1 tablet (100 mg AS/270 mg AQ)	1 tablet (100 mg AS/270 mg AQ)
36 kg or more (14 years or older)	2 tablets (100 mg AS/270 mg AQ)	2 tablets (100 mg AS/270 mg AQ)	2 tablets (100 mg AS/270 mg AQ)

**SELF-ASSESSMENT EXERCISE E**

**Answer the following questions about oral antimalarials treatment.**

1. Why are chloroquine and Sulfadoxine-pyrimethamine (SP) no longer the first-line and second-line antimalarial medicines recommended in the IMCI guidelines of many countries?

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2. What does the WHO recommend for oral antimalarial treatment?

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3. Explain how the following children should receive treatment:

- a. 10 kg child, 6 months old, AL (20 mg/120 mg):

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- b. 12 kg child, AS+AQ:

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- c. 33 kg child, 12 years old, AL (20 mg/120 mg):

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4. What special instructions are given with AL?

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## FEVER

### HOW WILL YOU GIVE PARACETAMOL FOR HIGH FEVER (OVER 38.5 DEGREES OR ABOVE)?

Paracetamol lowers a fever and reduces pain. If a child has high fever, regardless of the classification, give one dose of paracetamol in clinic. See the TREAT THE CHILD charts for doses.

## MEASLES

### HOW WILL YOU GIVE VITAMIN A TREATMENT?

Vitamin A is given to a child with MEASLES or SEVERE MALNUTRITION. Vitamin A is available in capsule and syrup. Use the child's age to determine the dose. Give 2 doses.

**Vitamin A helps resist the measles virus infection in the eye as well as in the layer of cells that line the lung, gut, mouth and throat.** It may also help the immune system to prevent other infections. Corneal clouding, a sign of vitamin A deficiency can progress to blindness if vitamin A is not given.

**Give the first dose to the child in the clinic.** Give the second dose to the mother to give her child the next day at home. If the vitamin A in your clinic is in capsule form, make sure the child swallows it whole. If the child is not able to swallow a whole capsule or needs only part of the capsule, open the capsule. Tear off or cut across the nipple with a clean tool. If the vitamin A capsule does not have a nipple, pierce the capsule with a needle.

Record the date each time you give vitamin A to a child. This is important. If you give repeated doses of vitamin A in a short period of time, there is danger of an overdose.

### HOW WILL YOU TREAT LOCAL INFECTIONS?

**Local infections include the eye infection and mouth ulcers that measles might cause.** You will learn more in the next section about teaching a caregiver to treat eye infection with tetracycline eye ointment and treat mouth ulcers with gentian violet.

Some treatments for local infections cause discomfort. Children often resist having their eyes, ears or mouth treated. Therefore, it is important to hold the child still. This will prevent the child from interfering with the treatment. However, do **not** attempt to hold the child still until immediately before treatment.

**If the child is not being referred,** and if the child has eye infection, ear infection, mouth ulcers, cough or sore throat, teach the child's mother or caregiver to treat the infection at home.

**If the child will be referred,** and the child needs pre-referral treatment with tetracycline eye ointment, clean the eye gently. Pull down the lower lid. Squirt the first dose of tetracycline eye ointment onto the lower eyelid. The dose is about the size of a grain of rice.

### ■ How will you treat Sami?

You have classified Sami's fever as MALARIA. The classification table identifies the following treatments for Sami:

#### ✓ Antimalarials

- ✓ One dose paracetamol in clinic for high fever – Sami will need this, because his fever is 38.6 degrees. Paracetamol is recommended for 38.5 degrees and above.
- ✓ You will **advise** Miriam when to return immediately and when to follow-up

You explain to Miriam that you think Sami has malaria, but that he can easily be treated with an oral medication. You also tell her that you will also give him some medicine to bring down his high fever. This should help him start to feel better.

### ■ How will you give Sami paracetamol?

You will refer to your TREAT THE CHILD chart about pain relief medications to determine the dosage of paracetamol. Sami is 3 years old and 12 kg. What dosage will you give?

WEIGHT	AGE	PARACETAMOL (120 mg/5 mls)
12 up to 14 kg	2 up to 3 years	7.5 ml

You decide that Sami needs 7.5 ml of 120 mg/5 mls paracetamol. You give this to him now. Miriam looks very relieved and holds Sami's hands. She asks how she will be able to give the antimalarials. She says she is nervous to do this and will need instructions, and she is worried about harming Sami with medication because he is grown. You tell her that you will walk her through this all.

### ■ How will you give Sami antimalarials?

You stress that it will be very important for her to give him the medication properly at home. You have Artesunate-lumefantrine (AL) in the clinic so you will explain how to give this medication. What dosage of AL tablets (20 mg artemether and 120 mg lumefantrine) will you give him?

WEIGHT (age)	AL tablets (20 mg artemether and 120 mg lumefantrine)					
	0h	8h	24h	36h	48h	60h
5–15 kg (2 mo under 3 years)	1	1	1	1	1	1

**You will give the first dose of AL in the clinic and observe for one hour.** You show Miriam how to measure the dosage, and give Sami the medication. You ask her to practice, and then you ask her to give the first dose in the clinic. You explain that you will watch him for 1 hour to make sure he does not vomit the medication up.

Sami does not vomit, so you do not need to repeat the dose. You instruct Miriam to give the second dose at home in 8 hours. You tell her to give the same dose twice each day for the next two days. AL should be given with food.

**Sami will then require additional tablets for the next two days. This is shown in the table above.**

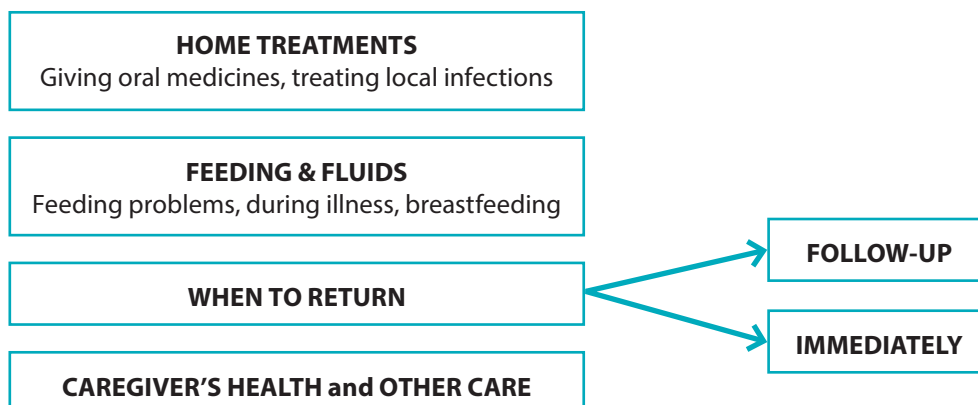
You will learn in the next section how to counsel further Miriam about Sami's care and when to return to the clinic, and you will check her understanding.

## 5.6 COUNSEL THE CAREGIVER

### DO YOU REMEMBER THE IMPORTANT STEPS WHEN COUNSELLING A CAREGIVER?

Review the topics that you will always discuss with a caregiver:

In this section, you will learn about **home treatments for fever and measles**, and when a **child should return to the clinic**. The good communication skills you have learned previously are very important for the teaching you will be doing.



### HOW WILL YOU COUNSEL ON GIVING ORAL ANTIMALARIALS?

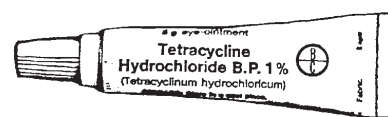
Antimalarials will be given with the same steps that we reviewed for oral medicines in Module 4 on cough or difficult breathing. Let us review the steps for counseling a caregiver about giving oral medicines at home:

1. **DETERMINE APPROPRIATE MEDICINES & DOSAGE** – for child's weight and age. You will determine this based on oral antimalarials in your country.
2. **EXPLAIN TREATMENT** – tell caregiver what the drug is, and why you are giving it. Explain the treatment steps as described in the appropriate TREAT THE CHILD box.
3. **DEMONSTRATE** how to measure a dose
4. **LET HER PRACTICE** – watch the caregiver practice measuring a dose by herself
5. **ASK CAREGIVER TO GIVE FIRST DOSE** to the child
6. **EXPLAIN DRUG CAREFULLY, THEN LABEL AND PACKAGE** – you would also give the caregiver a tube of tetracycline ointment for the eyes or a small bottle of gentian violet for mouth ulcers.
7. **CHECK UNDERSTANDING**

## HOW WILL YOU TREAT EYE INFECTIONS WITH TETRACYCLINE EYE OINTMENT?

If the child will be URGENTLY referred, clean the eye gently. Pull down the lower lid. Squirt the first dose of tetracycline eye ointment onto the lower eyelid.

If the child is not being referred, teach the caregiver to apply the tetracycline eye ointment. Refer to the TREAT THE CHILD chart and give the caregiver the following information.



Dose size = grain of rice

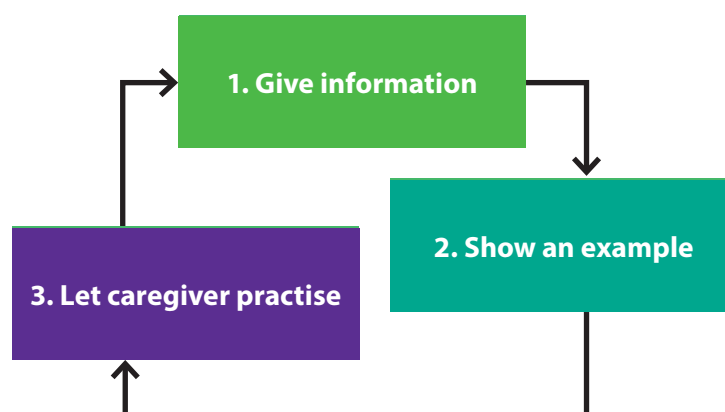
**The dose is about the size of a grain of rice.**

**GIVE INFORMATION. Tell the caregiver:**

- ✓ Treat both eyes to prevent damage to the eyes
- ✓ Wash her hands before and after treating the eye.
- ✓ Clean the child's eyes immediately before applying the tetracycline eye ointment. Use a clean cloth to wipe the eye.
- ✓ The ointment will slightly sting the child's eye
- ✓ Repeat the process (cleaning the eye and applying ointment) 3 times per day – in the morning, at mid-day and in the evening.

**DEMONSTRATE how to treat the eye.**

- ✓ Wash your hands
- ✓ Hold down the lower lid of your eye. Point to the lower lid. Tell the caregiver that this is where she should apply the ointment. Tell her to be careful that the tube does not touch the eye or lid.
- ✓ Have someone hold the child still.
- ✓ Wipe one of the child's eyes with the cloth. Squirt the ointment onto the lower lid. Make sure the caregiver sees where to apply the ointment and the correct dose (rice grain).



**ASK CAREGIVER TO PRACTICE cleaning and applying the eye ointment into the child's other eye.** Observe and give feedback as she practices.

**When she is finished, give her the following additional information.**

- Treat both eyes until the redness is gone from the infected eye. The infected eye is improving if there is less pus in the eye or the eyes are not stuck shut in the morning.
- Do not put any other eye ointments, drops or alternative treatments in the child's eyes. They may be harmful and damage the child's eyes. Putting harmful substances in the eye may cause blindness.
- After 2 days, if there is still pus in the eye, bring the child back to the clinic.

**Then give the caregiver the tube of ointment to take home.** Give her the same tube you used to treat the child in the clinic. Before the caregiver leaves, ask **checking questions** about treating the eye. For example, ask: “*Will you treat one or both eyes?*” or “*How much ointment you will put in the eye?*”

## HOW WILL YOU TREAT MOUTH ULCERS WITH GENTIAN VIOLET?

Treating mouth ulcers controls infection and helps the child to eat. Teach the caregiver to treat mouth ulcers with **half-strength gentian violet (.25%)**, which should be used in the mouth, not full-strength (0.5%).

### 1. GIVE INFORMATION. Tell the caregiver:

- ✓ A child will start eating normally sooner if she paints the mouth ulcers in her child’s mouth. It is important that the child eats.
- ✓ Clean the child’s mouth. Wrap a clean soft cloth around her finger. Dip it in salt water. Wipe the mouth.
- ✓ Use a clean cloth or a cotton-tipped stick to paint gentian violet on the mouth ulcers. The gentian violet will kill germs that cause the ulcers. Put a small amount of gentian violet on the cloth or stick. Do not let the child drink the gentian violet.
- ✓ Treat the mouth ulcers 2 times per day, in the morning and evening.
- ✓ Treat the mouth ulcers for 5 days and then stop.

### 2. SHOW how to wrap a clean cloth around your finger, dip it into salt water, and wipe the child’s mouth clean. Then paint half of the child’s mouth with half-strength gentian violet.

**As you have read, some treatments for local infections cause discomfort.** The drawing on the right shows a good position for holding a child. Tilt the child’s head back when applying eye ointment or treating mouth ulcers. Do **not** attempt to hold the child still until immediately before treatment.

### 3. ASK CAREGIVER TO PRACTICE. Watch her wipe the child’s mouth clean and paint the rest of the ulcers with gentian violet. Comment on the steps she did well and those that need to be improved.

**Give the caregiver a bottle of half-strength gentian violet to take home.** Tell her to return in 2 days for follow-up. Also tell her that she should return to the clinic earlier if the mouth ulcers get worse or if the child is not able to drink or eat.



Before the caregiver leaves, **ask checking questions.** If she anticipates any problems providing the treatment, help her to solve them. For example, ask:

“*What will you use to clean the child’s mouth?*”

“*When will you wash your hands?*”

“*How often will you treat the child’s mouth?*”

“*For how many days?*”

**WHEN SHOULD A CHILD WITH FEVER RETURN TO THE CLINIC?**

MALARIA	... in 3 days if the fever persists
FEVER: NO MALARIA	... in 2 days if the fever persists
MEASLES	... in 2 days
Any sick child	Should return immediately if they: ✓ are not able to drink or breastfeed ✓ become sicker

**SELF-ASSESSMENT EXERCISE F**

**Answer the following questions about counselling a caregiver about fever.**

1. What are the 3 basic teaching steps?

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2. What are important instructions for the caregiver about treating the eye with ointment? List 5 that you can think of from the information you provide the caregiver, and when you would demonstrate how to put the ointment on.

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3. When should children with FEVER: NO MALARIA return for follow-up? Pick the best answer below.

- a. The next day
- b. 3 days, after antimalarials are finished
- c. 2 days, if the fever persists

4. When should children with measles and eye or mouth complications return for follow-up? Pick the best answer below.

- a. The next day
- b. 4 days, if signs of measles (rash, runny nose, red eyes) persist
- c. 3 days

### ■ How will you counsel Miriam?

Now you will review how to counsel Miriam about home care to treat Sami's malaria.

Sami will need oral antimalarials for his malaria. You will give AL. Let us review the treatment guidelines for AL now:

*AL is given twice daily for 3 day.*

He weighs 12 kg, so give Sami tablets of AL for 3 days. He should get 1 tablet (Artemether-lumefantrine) at the clinic, another dose after 8 hours on the first day, then 1 tablet twice daily on the second and third day.

### ■ What important information does Miriam require?

You tell Miriam that Sami will need to take the medication for 3 days, and explain how she will give 1 tablet 8 hours after the first dose given at the clinic, and then 1 tablet twice daily for the next two days.

Demonstrate how to give Sami the medication, and ask her to practice measuring the dosage.

You tell Miriam to watch Sami carefully for 30 minutes after she gives the AL. If he vomits within 30 minutes, she should repeat the dose. She will need to return to the clinic for extra doses.

You will also need to counsel Miriam on **Plan A** for home treatment of diarrhoea.

### ■ How will you check that Miriam understands?

You finish by asking checking questions about the home treatment.

You ask, "How will you give the tablets? What is the schedule?"

You ask, "What should you do after giving the tablets to Sami?"

You ask, "How will you mix the ORS?"

You ask, "How will you give the zinc?"

Miriam answers the questions well.

### ■ When should Sami return?

You tell Miriam that she should bring Sami back in 3 days if his fever continues, or in 5 days if his diarrhoea is continuing. You take Miriam's Mother's Card and review when she should bring Sami back immediately if danger signs develop.

Miriam takes the AL tablets, zinc supplements, and two packets of ORS. She thanks you for your help.

## 5.7 PROVIDE FOLLOW-UP CARE

**Open your Chart Booklet and review the boxes on follow-up care. What do you observe?** You will use these instructions when a child returns for a follow-up visit for a persistent fever, measles, or other cause of fever. The follow-up boxes also describe treatment.

### REMEMBER!

**If a fever has been present for 7 days or longer, refer the child for assessment. This child may have typhoid fever or another serious infection requiring additional diagnostic testing and special treatment.**

### FEVER: NO MALARIA

#### HOW DO YOU FOLLOW UP ON FEVER IF PERSISTS AFTER 3 DAYS?

If this child returns for follow-up after 3 days because the fever persists, follow the instructions below.

1. Do a full reassessment of the child, assessing for other causes of fever
2. Do a malaria test with RDT or microscopy

#### ► MALARIA TEST IS POSITIVE

Treat with recommended first-line oral antimalarial. Advise the caregiver to return again in 3 days if the fever persists.

#### ► CHILD HAS ANOTHER CAUSE OF FEVER, BESIDES MALARIA

If the child has any cause of fever other than malaria, provide treatment for that cause.

#### ▼ CHILD HAS GENERAL DANGER SIGN(S) OR STIFF NECK

If the child has any general danger signs or stiff neck, treat as described on the chart for VERY SEVERE FEBRILE DISEASE. Refer to the previous page to review this treatment.

### MALARIA

#### HOW WILL YOU FOLLOW-UP MALARIA (IF FEVER PERSISTS 3 DAYS)?

Any child classified as having MALARIA should return for follow-up if the fever persists for 3 days. If a child classified with MALARIA returns with a fever within 14 days of receiving treatment, you will provide the same follow-up care.



**If a child returns because the fever persists after 3 days, or within 14 days:****✓ Do a full reassessment of the child, assessing for other causes of fever**

If the child also had measles or any other cause of fever at the initial visit, the fever may be due to the measles or another cause. This will require further assessment and possible laboratory investigations. It is very common for the fever from measles to continue for several days. Therefore, the persistent fever may be due to the measles rather than to resistant malaria.

**▼ CHILD HAS GENERAL DANGER SIGN(S) OR STIFF NECK**

If the child has any general danger signs or stiff neck, treat as described on the chart for VERY SEVERE FEBRILE DISEASE. **Refer urgently to hospital.**

If the child has already been on an antibiotic, the illness worsening to very severe febrile disease might mean there is a bacterial infection that is not responsive to this antibiotic. Give a first dose of the second-line antibiotic or intramuscular chloramphenicol.

If the child cannot take an oral antibiotic because he has repeated vomiting, is lethargic or unconscious, or is not able to drink, give intramuscular chloramphenicol. Also give intramuscular chloramphenicol if he has a stiff neck.

**✓ Do a malaria test with RDT or microscopy**

It is very unusual for the fever due to malaria to persist for 3 days after the initial visit or fever to return within 14 days of receiving ACT treatment. Therefore, a blood test using microscopy should be done to confirm that malaria parasites are resistant to the first-line ACT antimalarial before giving an effective second-line ACT treatment.

**► MALARIA TEST POSITIVE**

Treat with second-line oral antimalarial. Ask the caregiver to return again in 3 days if the fever persists. If second line oral antimalarial is not available, refer the child to hospital.

**Note:** If a child had a positive malaria test on the initial visit, the commonly used HRP-2-based RDT tests will remain positive for even up to 3 weeks after effective treatment. Therefore only microscopy should be used to identify malaria parasites on follow up after initial treatment malaria. HRP-2 based RDT tests should not be repeated if fever persists or returns within 14 days. *Check on the type of RDT you use in your clinic and how long the test remains positive.*

**► CHILD HAS ANOTHER CAUSE OF FEVER, BESIDES MALARIA**

If the child has any cause of fever other than malaria, provide treatment for that cause. For example, give treatment for the ear infection or refer for other problems such as urinary tract infection or abscess.



### SELF-ASSESSMENT EXERCISE F

**Read about Lin, who is returning for follow-up for MALARIA. Answer the questions.**

*In this clinic, Artemether-lumefantrine (AL) is the first-line oral antimalarial (20 mg artemether and 120 mg lumefantrine). Artesunate plus Amodiaquine is the second-line oral antimalarial.*

Lin's mother has brought him back to the clinic because he still has fever. The risk of malaria is high. Two days ago he was given AL for MALARIA. He was also given a dose of paracetamol. His mother says that he has no new problems, just the fever. He is 3 years old and weighs 14 kg. His axillary temperature is 38.5 °C.

1. How would you reassess Lin?

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When you reassess Lin, he has no general danger signs. He has no cough and no diarrhoea. He has now had fever for 4 days. He does not have stiff neck. There is no runny nose or generalized rash. Microscopy slide for malaria parasites is positive. He has no ear problem. He is classified as having NO ANAEMIA AND NOT VERY LOW WEIGHT. There is no other apparent cause of fever.

2. How would you treat Lin? If you would give a drug, specify the dose and schedule.

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### SELF-ASSESSMENT EXERCISE G

**Read about Sindi, who is returning for follow-up for MALARIA. Answer the questions.**

Sindi's mother has come back to the clinic because Sindi still has a fever. Three days ago she had a positive rapid malaria test and was given treatment for MALARIA. Her mother says that she is sicker now, vomiting and very hot. Sindi is 18 months old and weighs 11 kg. Her axillary temperature is 39 °C today.

When you assess Sindi, her mother says that yesterday she could drink, but she vomited after eating. She did not always vomit after drinking a small amount. She has not had convulsions. She will not wake up when her mother tries to wake her. She is unconscious. Her mother says that she does not have a cough or diarrhoea. She has now had fever for 5 days. She does not have stiff neck, runny nose or generalized rash.

3. How will you manage Sindi?

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## MEASLES

### HOW WILL YOU FOLLOW-UP ON MEASLES WITH COMPLICATIONS (IN 2 DAYS)?

When a child who was classified as having MEASLES WITH EYE OR MOUTH COMPLICATIONS returns for follow-up in 2 days, you will check the eyes and mouth. You will select treatment based on the signs.

#### Follow these instructions:

1. Look for red eyes and pus draining from the eyes
2. Look at mouth ulcers
3. Smell the mouth

### EYE INFECTIONS

#### ▲ NO PUS OR REDNESS

Stop the treatment. Praise the caregiver for treating the eye well. Tell her the infection is gone.

#### ► PUS IS GONE, BUT REDNESS REMAINS

Continue the treatment. Tell the caregiver that the treatments are helping. Encourage her to continue giving the correct treatment until the redness is gone.

#### ▼ PUS IS STILL DRAINING FROM EYE

Ask the caregiver to describe or show you how she has been treating the eye infection. If she has brought the tube of ointment with her, you can see whether it has been used.

**There may have been problems so that the caregiver did not do the treatment correctly.** For example, she may not have treated the eye three times a day, or she may not have cleaned the eye before applying the ointment, or the child may have struggled so that she could not put the ointment in the eye.

**If the caregiver has not correctly treated the eye, ask her what problems she had in trying to give the treatment.** Teach her any parts of the treatment that she does not seem to know. Discuss with her how to overcome difficulties she is having. Finally, explain to her the importance of the treatment. Ask her to return again if the eye does not improve. However, if you think that the caregiver still will not be able to treat the eye correctly, arrange to treat the eye each day in clinic or refer the child to a hospital.

**If the caregiver has correctly treated the eye infection for 2 days and there is still pus draining from the eye, refer the child to a hospital.**

## MOUTH ULCERS

### ▼ ULCERS ARE WORSE, OR VERY FOUL SMELL FROM MOUTH

Refer to hospital. The mouth problem may prevent the child from eating or drinking and may become severe. A very foul smell may mean a serious infection. Mouth problems could be complicated by thrush or herpes, which is the virus which causes cold sores.

### ▲ ► ULCERS ARE SAME or BETTER

Ask the caregiver to **continue treating the mouth** with half-strength gentian violet for a total of 5 days. She should continue to feed the child appropriately to make up for weight lost during the acute illness and to prevent malnutrition.

Review with the caregiver when to seek care and how to feed her child as described on the COUNSEL THE MOTHER chart. Tell her that attention to feeding is especially important for children who have measles because they are at risk of developing malnutrition.

**The child with measles continues to have increased risk of illness for months, it is important that the caregiver know the signs to bring the child back for care.** Children who have measles are at increased risk of developing complications or a new problem. This is due to immune suppression that occurs during, and following, measles.

#### ■ How will you provide follow-up for Sami?

You classified Sami's fever as MALARIA, and gave Miriam AL tablets to give to Sami for 3 days. You counselled her on how to safely give this treatment at home, and instructions on when to return to the clinic if the fever continued.

**Fortunately, you did not see Miriam or Sami in the days following their visit, which hopefully means the medication worked well and Sami's fever reduced within 3 days.**

As you instructed Miriam how to give the medication, and how to monitor Sami closely, this would have well-equipped her to deliver the medication and not return to the clinic with concern over these common issues.

#### ■ What if Sami *had* come to the clinic for follow-up?

However, in the case that Sami's fever had continued for 3 days, and Miriam had returned to the clinic, you would have needed to do a full re-assessment.

As you reassess a child in this situation, look for the cause of the fever, possibly pneumonia, meningitis, measles, ear infection, or dysentery. Also consider whether the child has any other problem that could cause the fever, such as tuberculosis, urinary tract infection, osteomyelitis or abscess.

## 5.8 USING THIS MODULE IN YOUR CLINIC

### HOW WILL YOU BEGIN TO APPLY THE KNOWLEDGE YOU HAVE GAINED FROM THIS MODULE IN MANAGING CHILDREN WITH FEVER?

In the coming days, you should focus on these key clinical skills. Practicing these skills will help you to better understand how to use IMCI for fever and measles.

#### MALARIA & MEASLES

- ✓ Determine if your area is high or low malaria risk. Does this change by season? Are there nearby areas that are of a different risk setting – in case any of your patients travel from there, or recently travelled?
- ✓ Determine what capacity you have to do malaria tests in your facility (e.g. microscopy or Rapid Diagnostic Tests). What tests are available, and what is the procedure?
- ✓ If you have a case of measles, what are the national reporting procedures for measles outbreaks (if any)?

#### ASSESS

- ✓ Determine if children have fever by taking their temperature, feeling if they are hot, or examining their history of fever.
- ✓ Look and feel children for stiff neck
- ✓ Look for runny nose
- ✓ Look for signs of measles – generalized rash, cough, runny nose, or red eyes
- ✓ Look for signs of complications from measles – mouth ulcers, pus draining from eye, and clouded cornea

#### CLASSIFY

- ✓ Use your chart booklet to classify fever in high and low malaria risk areas
- ✓ Use your chart booklet to classify any complications if children have measles, or have had measles within the past 3 months

#### TREAT

- ✓ Determine how to give urgent treatment for very severe febrile disease
- ✓ Determine what antimalarials you have available to you. Determine what dosages you have, and which are appropriate for certain weight/age groups
- ✓ Practice giving oral antimalarials
- ✓ Practice giving paracetamol for high fever
- ✓ Practice giving Vitamin A treatment

#### COUNSEL

- ✓ Teach a caregiver how to give antimalarials, eye ointment, and violet gentian
- ✓ Counsel a caregiver about when to return for follow-up for fever or complications
- ✓ Counsel a caregiver about when to return immediately

**Remember to use your logbook for MODULE 5:**

- Complete logbook exercises, and bring completed to the next meeting
- Record cases on IMCI recording forms, and bring to the next meeting
- Take notes if you experience anything difficult, confusing, or interesting during these cases. These will be valuable notes to share with your study group and facilitator.

## 5.9 REVIEW QUESTIONS

### AFTER THE MODULE: WHAT DO YOU KNOW NOW ABOUT MANAGING FEVER?

Before you began studying this module, you practiced your knowledge on with several multiple-choice questions. Now that you have finished the module, you will answer the same questions. This will help demonstrate what you have learned.

**Circle the best answer for each question.**

1. Which of the following children has a fever that requires further investigation?
  - a. Imrana has an axillary temperature of 37 °C
  - b. Joy's mother says she has been feeling very hot for the past three days
  - c. Samuel's face is very flushed and red
2. What are common causes of fever that often kill children?
  - a. Local infection and malaria
  - b. Meningitis and influenza
  - c. Measles and malaria
3. What is a critical treatment for reducing high fever in children?
  - a. Paracetamol
  - b. Amoxicillin or another antibiotic
  - c. Fluids
4. What is recommended treatment for malaria?
  - a. Chloroquine
  - b. Artemisinin-based combination therapies
  - c. Paracetamol
5. Traci has a fever, generalized rash, runny nose, and mouth ulcers. How you would you classify?
  - a. She shows signs local infections of the skin
  - b. She shows clinical signs of AIDS
  - c. Measles with mouth complications

**Check your answers on the next page. How did you do? ..... complete out of 5.**

Did you miss questions?

Turn back to the section to re-read and practice the exercises.

## 5.10 ANSWER KEY

### REVIEW QUESTIONS

QUESTION	ANSWER	Did you miss the question? Return to this section to read and practice:
1	B	INTRODUCTION, ASSESS
2	C	INTRODUCTION
3	A	CLASSIFY, TREAT
4	B	TREAT
5	C	ASSESS, CLASSIFY

### EXERCISE A (ASSESS & CLASSIFY)

1. YES. Children who have a fever AND signs of measles will also be assessed for measles.
2. In high risk areas, all children with fever; in low risk areas, any child without another clear cause of fever
3. Fever and any general danger sign *OR* stiff neck
4. Reba answers:
  - a. MALARIA
  - b. FALSE: she requires oral antimalarials, but not paracetamol because her fever is not high fever (38.5 degrees C)
5. FALSE. The child may require a malaria test in two scenarios: (a) the child has no other clear cause of fever, or (b) if the child travelled to a high risk malaria area within 2 weeks.

### EXERCISE B (ASSESS & CLASSIFY)

1. If the child has a fever and shows signs of measles now, or has had measles in the last 3 months.
2. First you look for a generalized rash. If this is present, the child should also have one of the following signs: cough, runny nose, or red eyes.
3. SEVERE COMPLICATED MEASLES
4. Signs of measles, and also pus draining from eye or mouth ulcers



Age: 5 mo

Temperature (°C): 37.5 °C

Initial Visit? ☒

Follow-up Visit?

**ASSESS** (Circle all signs present)

## CLASSIFY

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## EXERCISE D (DOLMA)

Name: *Dolma*Age: *12 mo*Weight (kg): *7.2 kg*Temperature (°C): *36.5 °C*Ask: What are the child's problems? *Feels hot*Initial Visit? *X*

Follow-up Visit?

ASSESS (Circle all signs present)

CLASSIFY

<b>CHECK FOR GENERAL DANGER SIGNS</b> <ul style="list-style-type: none"> <li>• NOT ABLE TO DRINK OR BREASTFEED</li> <li>• VOMITS EVERYTHING</li> <li>• CONVULSIONS</li> <li>• LETHARGIC OR UNCONSCIOUS</li> <li>• CONVULSING NOW</li> </ul>	General danger sign present? Yes ___ No <i>X</i> <b>Remember to use Danger sign when selecting classifications</b>
<b>DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING?</b> <ul style="list-style-type: none"> <li>• For how long? <i>4</i> Days</li> <li>• Count the breaths in one minute <i>43</i> breaths per minute. Fast breathing?</li> <li>• Look for chest indrawing</li> <li>• Look and listen for stridor</li> <li>• Look and listen for wheezing</li> </ul>	Yes ___ No <i>X</i>
<b>DOES THE CHILD HAVE DIARRHOEA?</b> <ul style="list-style-type: none"> <li>• For how long? <i>2-3</i> Days</li> <li>• Is there blood in the stool?</li> <li>• Look at the child's general condition. Is the child:             <ul style="list-style-type: none"> <li>◦ Lethargic or unconscious?</li> <li>◦ Restless and irritable?</li> </ul> </li> <li>• Look for sunken eyes.</li> <li>• Offer the child fluid. Is the child:             <ul style="list-style-type: none"> <li>◦ Not able to drink or drinking poorly?</li> <li>◦ Drinking eagerly, thirsty?</li> </ul> </li> <li>• Pinch the skin of the abdomen. Does it go back:             <ul style="list-style-type: none"> <li>◦ Very slowly (longer than 2 seconds)?</li> <li>◦ Slowly?</li> </ul> </li> </ul>	Yes <i>X</i> No ___  <i>Diarrhoea, no dehydration</i>
<b>DOES THE CHILD HAVE FEVER? (by history/feels hot/temperature 37.5°C or above)</b> Decide malaria risk: High ___ Low <i>X</i> No ___ <ul style="list-style-type: none"> <li>• For how long? <i>2</i> Days</li> <li>• If more than 7 days, has fever been present every day?</li> <li>• Has child had measles within the last 3 months?</li> </ul> Do malaria test if NO general danger sign High risk: all fever cases Low risk: if NO obvious cause of fever Test POSITIVE? P. falciparum P. vivax <i>NEGATIVE?</i>	Yes <i>X</i> No ___  <i>Measles</i>
<b>If the child has measles now or within the last 3 months:</b> <ul style="list-style-type: none"> <li>• Look for mouth ulcers.             <ul style="list-style-type: none"> <li>◦ If yes, are they deep and extensive?</li> </ul> </li> <li>• Look for pus draining from the eye.</li> <li>• Look for clouding of the cornea.</li> </ul>	

**EXERCISE E (TREAT)**

1. Resistance to chloroquine is emerging and growing, and now resistance to SP is growing as well.
2. WHO now recommends the use of artemisinin-based combination therapies (ACT), which have been shown to improve treatment efficacy. The advantages of ACT are that it can very quickly reduce the number of malarial parasites and improve the symptoms.
3. Explain how the following children should receive treatment:
  - a. 10 kg child, 6 months old, AL (20 mg/120 mg): 1 tablet given twice a day for next two days (at 0 hours, 12, 24, 36, 48, and 60)
  - b. 12 kg child, AS+AQ: 1 tablet (50 mg AS/135 mg AQ) each day for 3 days
  - c. 33 kg child, 12 years old, AL (20 mg/120 mg): 4 tablets given twice a day for next two days (at 0 hours, 12, 24, 36, 48, and 60)
4. First dose in clinic, and observe for 1 hour. If child vomits within the hour, repeat the dose. Give second dose at home 8 hours later. Must be taken with food.

**EXERCISE F (COUNSEL)**

1. Give information, 2. demonstrate, 3. ask caregiver to practice
2. Answers can include any of the following tips:
  - ✓ Dose of tetracycline eye ointment is the size of a grain of rice
  - ✓ Treat both eyes
  - ✓ Wash hands before and after treating eye
  - ✓ Clean child's eyes before applying ointment – use a clean cloth to wipe the eye
  - ✓ Do not touch the tube to the eye or lid when applying the ointment
  - ✓ Put the ointment in the lower lid of the eye. Hold the lid down.
  - ✓ Apply dose of ointment 3 times per day – in the morning, afternoon, and evening
  - ✓ Treat until redness is gone from eyes
  - ✓ If pus remains after 2 days, return to clinic
  - ✓ Do not put other drops, ointments, or treatments in the eye. They might harm the child's eyes.
3. B: 3 days if fever persists
4. C: 3 days

**EXERCISE G (FOLLOW-UP)**

1. Today you will test Lin again for malaria, and assess for other causes of fever using the instructions in your charts.
2. Lin has tested positive for malaria again. You will need to give him the second-line treatment, which is Artesunate plus Amodiaquine. You will give him the first dose in the clinic: 1 tablet (50 mg AS/135 mg AQ). He will require the same dose, once daily, for the next two days.
3. Do a full reassessment as on the ASSESS & CLASSIFY chart. You classify as VERY SEVERE FEBRILE DISEASE. Sindi must be referred urgently because she has a general danger sign. You will give the first doses of an antimalarial, the first dose of an appropriate antibiotic, and one dose of paracetamol. You also need to treat for low blood sugar, but Sindi is unconscious. If you can provide by NG tube you will. Refer urgently.

ISBN 978 92 4 150682 3



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