INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS

Participant Manual

MANAGEMENT OF THE SICK YOUNG INFANT AGE UP TO 2 MONTHS

2019

unicef
for every child

World Health Organization

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Management of the sick young infant aged up to 2 months: participant manual

ISBN 978-92-4-151637-2

Suggested citation. Management of the sick young infant aged up to 2 months: participant manual. Geneva: World Health Organization; 2019. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Printed in Switzerland

Design by Inís Communication – www.iniscommunication.com

CONTENTS

INTRODUCTION

In this module you will learn to manage a sick young infant, defined as an infant aged up to 2 months. This includes the neonatal period, which is the first 4 weeks of life. The process is very similar to the one on managing the sick child age 2 months up to 5 years. All the steps are in the Chart Booklet, Management of the Sick Young Infant Age up to 2 Months:

Assess

Classify

Treat

Counsel the mother

Follow-up

Young infants have special characteristics that must be considered when assessing and classifying their illness. In the first few days of life, newborn infants are often sick from conditions related to pregnancy, labour and delivery or they may have trouble breathing due to immature lungs. These conditions include birth asphyxia, birth trauma, preterm birth and early-onset infections such as sepsis from premature ruptured membranes. Newborns who have any of these conditions need immediate attention.

Severe infections are the most common serious illness during the first two months of life. Young infants can become sick and die very quickly from serious bacterial infections. Infections are particularly more dangerous in low birth weight infants. Young infants differ from older infants and children in the way they manifest signs of infection. They frequently have only non-specific signs such as difficulty in feeding, reduced movements, fever or low body temperature. Lower chest indrawing is another clinical sign that is different in young infants. Only severe lower chest indrawing is an important sign of severe disease. Mild chest indrawing is normal in young infants because their chest wall is soft.

For these reasons, you will assess, classify and treat the young infant somewhat differently than an older infant or young child. The young infant charts list the special signs to assess and classify young infants and instructions on treatment. You will use these charts for sick young infants, including newborns, from birth up to 2 months of age.

Skilled care provided to the mother during labour and delivery and to the newborn immediately after birth can prevent many complications. It is therefore recommended that all births should be

attended by health workers skilled in delivery and immediate newborn care. Guidance on care during delivery and immediate newborn care is not included in the IMCI chart. It is available in the *WHO Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice* (http://www.who.int/making_pregnancy_safer/publications/PCPNC_2006_03b.pdf).

To assess and classify a sick young infant, you will first ask the mother or another family member about the young infant's problems.

Then you will check **all** young infants for possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. This is done because young infants may often only have general signs of illness, which may not be well-recognized as signs of illness by the mother. The signs included in the chart are based on evidence from a recent, large multi-centre research study. They can detect severe disease in the young infant, including potentially serious conditions related to labour and delivery which are common in the first week of life as well as severe bacterial infections.

Then you will check **all** young infants for the presence of jaundice and HIV infection. You will assess and classify young infants for feeding problem or low weight for age, check the infants' immunization status and assess diarrhoea and other problems mentioned by the mother.

LEARNING OBJECTIVES

This module will describe the following tasks and allow you to practice some of them (some will be practiced in the clinic):

- Assessing and classifying a young infant for possible serious bacterial infection or very severe disease, pneumonia, and local bacterial infection
- Assessing and classifying for jaundice
- Assessing and classifying a young infant with diarrhoea
- Assessing and classifying a young infant for HIV infection
- Checking for a feeding problem or low weight for age, assessing breastfeeding and classifying feeding
- Checking the young infant's immunization status
- Determining if a sick young infant needs urgent referral or can be treated in the clinic and/or at home
- Providing pre-referral treatment to a young infant with possible severe bacterial infection or very severe disease
- Where referral is refused or not feasible, further assessing and classifying the young infant and determining appropriate treatment
- Preparing and giving an injection of gentamicin and ampicillin
- Treating a young infant with oral antibiotics
- Managing jaundice
- Teaching the mother to treat local bacterial infection and thrush at home
- Giving extra fluid for diarrhoea and continued feeding

- Managing HIV infected or exposed young infant
- Immunizing young infant as needed
- Teaching correct positioning and attachment for breastfeeding
- Teaching the mother how to express breastmilk
- Counselling the mother about other feeding problems
- Counselling the HIV positive mother about feeding options and teach the HIV positive mother who is not breastfeeding how to prepare commercial formula milk and feed the infant by cup
- Teaching the mother how to feed and keep a low weight infant warm at home
- Advising the mother how to give home care for the young infant
- Giving follow-up care for the sick young infant

1. ASSESS AND CLASSIFY THE SICK YOUNG INFANT

A mother (or other family member such as the father, grandmother, sister or brother) usually brings a young infant to the clinic because the infant is sick. But mothers also bring their infants for well-baby visits, immunization sessions and for other problems. The steps on the *YOUNG INFANT* charts describe what you should do when a mother brings her young infant to the clinic because the infant is sick.

Ask the mother what the young infant's problems are. Determine if this is an initial or follow-up visit for these problems. If this is a follow-up visit, you should manage the infant according to the special instructions for a follow-up visit. These special instructions are in the follow-up boxes toward the end of the *YOUNG INFANT* Chart Booklet.

If it is an initial visit, follow the sequence of steps on the chart. This section teaches the steps to assess and classify a sick young infant at an initial visit:

- Check for signs of possible serious bacterial infection or very severe disease, pneumonia, and local bacterial infection. Then classify the young infant based on the signs found.
- Check for the presence of jaundice and classify for jaundice.
- Ask about diarrhoea. If the infant has diarrhoea, assess the related signs. Classify the young infant for dehydration.
- Check for HIV infection. Classify HIV infection by test result
- Check for feeding problem or low weight for age
- Check the young infant's immunization status.
- Assess any other problems.

If you find a reason that a young infant needs urgent referral, you may continue and complete the assessment of illness quickly. However, skip the assessment of breastfeeding or other feeding and checking immunization status for this infant because these can take some time.

1.1 CHECK THE YOUNG INFANT FOR POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, PNEUMONIA AND LOCAL BACTERIAL INFECTION

Young infants with possible serious bacterial infection (PSBI) are very sick and need urgent referral. Thus, ***every*** sick young infant needs to be assessed carefully. In this assessment you are looking for signs of severe disease. A young infant can become sick and die ***very quickly*** from serious bacterial infections such as pneumonia, sepsis and meningitis. The signs of very severe disease also identify young infants who have other serious conditions like severe birth asphyxia and complications of preterm birth.

The steps to assess the young infant are shown on **page 1** of the Chart Booklet, as shown below.

ASK:

- Is the infant having difficulty in feeding?
- Has the infant had convulsions (fits)?

LOOK AND FEEL:

- Count the breaths in 1 minute.

  Repeat the count if it is 60 or more breaths per minute.

  } The young infant must be calm.
- Look for severe chest indrawing.
- Measure axillary temperature.
- Look at the young infant's movements. If the infant is sleeping, ask the mother to wake him/her.
  - Does the infant move on his/her own? If the infant is not moving, gently stimulate him or her.
  - Does the infant move only when stimulated but then stops?
  - Does the infant not move at all?
- Look at the umbilicus. Is it red or draining pus?
- Look for skin pustules.

It is important to assess the signs in the order on the chart, and to keep the young infant calm. The young infant ***must be calm*** and may be asleep while you assess the first two signs, that is, count breathing and look for severe lower chest indrawing. If the infant is awake, observe his or her movements.

To assess the next few signs, you will pick up the infant and then undress him/her, look at the skin all over his body and measure his/her temperature. If the infant was sleeping earlier, by this time he or she will probably be awake. Then you can see and observe his or her movements.

How to assess each sign is described below:

ASK: Is the infant having difficulty in feeding?

Any difficulty mentioned by the mother is important. A newborn, who has not been able to feed since birth may be premature or may have complications such as birth asphyxia. A young infant who was feeding well earlier but stopped feeding well, or is not feeding at all may have a serious infection. These infants who are either not able to feed or are not feeding well should be referred urgently to hospital.

The mother may also mention difficulties such as: her infant feeds too frequently (or not frequently enough), she does not have enough milk, her nipples are sore, or she has flat or inverted nipples. You will assess these difficulties later during breastfeeding assessment.

ASK: Has the infant had convulsions (fits) during this illness?

Ask the mother if the young infant has had convulsions during this current illness. Use words the mother understands. For example, the mother may know convulsions as "fits" or "spasms." During a convulsion, the young infant's arms and legs may become stiff. The infant may stop breathing and become blue. Many times there may only be rhythmic movements of a part of the body, such as rhythmic twitching of the mouth or blinking of eyes. The young infant may lose consciousness.

LOOK: Count the breaths in one minute. Repeat the count if 60 or more breaths per minute.

You must count the breaths the young infant takes in one minute to decide whether the infant has fast breathing. The young infant must be quiet and calm when you watch and listen to his or her breathing. Young infants usually breathe faster than older infants and young children. The breathing rate of a healthy young infant is commonly more than 50 breaths per minute. Therefore, 60 breaths per minute or more is the cut-off used to identify fast breathing in a young infant.

If the first count is 60 breaths or more, repeat the count. This is important because the breathing rate of a young infant is often irregular. The young infant will occasionally stop breathing for a few seconds, followed by a period of faster breathing. If the second count is also 60 breaths or more, the young infant has fast breathing.

LOOK for severe chest indrawing.

Lower chest wall indrawing is the inward movement of the bony structure of the chest wall when the child breathes in. If you did not lift the young infant's shirt when you counted the child's breaths, ask the mother to lift it now.

Before you look for chest indrawing watch the young infant to determine when the child is breathing in and when the child is breathing out. Look for chest indrawing when the young infant breathes in. Look at the lower chest wall (lower ribs). The child has chest indrawing if the lower chest wall goes in when the child breathes in.

Chest indrawing occurs when the effort the child needs to breathe in is much greater than normal. In normal breathing, the whole chest wall (upper and lower) and the abdomen move out when the child breathes in. When chest indrawing is present, the lower chest wall goes in when the child breathes in.

Mild chest indrawing is normal in a young infant because the chest wall is soft. Severe chest indrawing is very deep and easy to see. Severe chest indrawing is a sign of pneumonia and is serious in a young infant.

The child breathing in WITHOUT chest indrawing

The child breathing in WITH chest indrawing

FEEL: Measure axillary temperature.

The thresholds in the YOUNG INFANT chart are based on axillary temperature (normally measured after keeping the thermometer inside the axilla for one minute or after the beep is heard). Fever (axillary temperature of 38°C or above) is uncommon in the first two months of life. If a young infant has fever, this may mean the infant has possible serious bacterial infection.

Fever may be the ***only*** sign of a serious bacterial infection. Young infants can also respond to infection by dropping their body temperature to below 35.5°C (axillary temperature). Low body temperature is called hypothermia.

If you find that the temperature is 38°C or above or feels hot to touch or is below 35.5°C or cold to touch, complete the assessment. If the high or low temperature is the only severe sign, repeat the measurement after 30 minutes. In the meantime, remove clothing and let the baby who has fever cool. If the baby has hypothermia in winter, wrap the baby to warm her for 30 minutes. Use the second reading to decide if the infant has fever or low temperature.

LOOK at the umbilicus – is it red or draining pus?

The umbilical cord usually separates one week after birth and the wound heals within 15 days. Redness of the end of the umbilicus or pus draining from the umbilicus are signs of umbilical infection. Early recognition and treatment of an infected umbilicus are essential to prevent sepsis.

LOOK for skin pustules. Are there pustules?

Examine the skin on the entire body. Skin pustules are red spots or blisters which contain pus.

LOOK at the young infant's movements. Does the young infant move on his/her own? Does the infant move only when stimulated but then stops? Does the infant not move at all?

Young infants often sleep most of the time, and this is not a sign of illness. Observe the infant's movements while you do the assessment.

If a young infant does not wake up during the assessment, ask the mother to wake him. An awake young infant will normally move his arms or legs or turn his head several times in a minute if you watch him closely. If the infant is awake but has no spontaneous movements, gently stimulate the young infant. If the infant moves only when stimulated and then stops moving, or does not move at all, it is a sign of possible serious bacterial infection or very severe disease. An infant who cannot be woken up even after stimulation also should also be considered to have this sign.

Your facilitator will lead a drill to review the cut-offs for fast breathing in young infants.

EXERCISE A

PART 1 – VIDEO

You will watch a video demonstration of how to assess a young infant for Possible Serious Bacterial Infection or Very Severe Disease, Pneumonia, and Local Bacterial Infection.

PART 2 – PHOTOGRAPHS

Study the photographs numbered 1, 2 and 6 in the booklet and read the explanation below for each photo.

Photograph 1: Normal umbilicus in a newborn

Photograph 2: An umbilicus with redness extending to the skin of the abdomen

Photograph 6: Skin pustules

Then study the photographs numbered 3–5. Tick your assessment of the umbilicus of each of these young infants.

UMBILICUS	NORMAL	REDNESS OR DRAINING PUS	REDNESS EXTENDING TO THE SKIN OF ABDOMEN
Photograph 3			
Photograph 4			
Photograph 5			

1.2 CLASSIFY ALL SICK YOUNG INFANTS FOR POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, PNEUMONIA, AND LOCAL BACTERIAL INFECTION

To classify all sick young infants for possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection, compare the infant's signs to signs listed in the chart and choose the appropriate classification. If the infant has any sign in the pink row, select POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE. If the infant has only the sign in the second row and no sign in the pink row, select PNEUMONIA. If the infant has any sign in the third row, select LOCAL BACTERIAL INFECTION. An infant who has none of the signs in the top three rows gets the classification INFECTION UNLIKELY.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 1 AND READ THE RIGHT SIDE OF THE PAGE (COLOURED BOXES)

POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE

A young infant with signs in this classification may have a serious disease and be at high risk of dying. The infant may have complications of preterm birth, very low birth weight or birth asphyxia, or may have a serious bacterial infection. The serious infection may be pneumonia, sepsis or meningitis. It is difficult to distinguish between these conditions in a young infant. Fortunately, it is not necessary to make this distinction for making the initial management decisions.

A young infant with any sign of POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE needs urgent referral to hospital. Before referral, give a first dose of an intramuscular antibiotics (gentamicin and ampicillin). Treat to prevent low blood sugar by giving breastmilk, or give sugar water if it is not possible to give breastmilk. If the young infant is not able to feed, give breastmilk or sugar water by nasogastric tube. Malaria is unusual in infants of this age, so no treatment is required for possible severe malaria.

Advising the mother to keep her sick young infant warm is very important. Young infants have difficulty maintaining their body temperature. Low temperature alone can kill young infants.

PNEUMONIA

Young infants who present with fast breathing as the only sign of illness may have pneumonia. However, when fast breathing is the only sign of illness, the age of the infant determines the classification and recommended treatment. Research has shown that babies 7–59 days old can be treated with oral antibiotics if they present with fast breathing alone and they likely do not need hospital treatment.

Infants with fast breathing as the only sign of illness:

- Infants who are **7 to 59 days old** are classified as PNEUMONIA and can be treated with oral antibiotics at home.
- Infants who are **less than 7 days old** are classified as VERY SEVERE DISEASE and should be given pre-referral treatments and urgently referred.

It is required to follow up these young infants in 3 days (on day 4 of treatment) to check that they are improving. If not, they must be referred to hospital.

LOCAL BACTERIAL INFECTION

Young infants with this classification have an umbilical or a skin infection.

Treatment includes giving an appropriate oral antibiotic at home for 5 days. The mother will also treat the local bacterial infection at home and give home care. She should return for follow-up in 2 days to be sure the infection is improving. Local bacterial infections can progress rapidly in young infants.

INFECTION UNLIKELY

Young infants with this classification have none of the signs of possible serious bacterial infection or very severe disease, pneumonia, or local bacterial infection. Advise the mother to give home care to the young infant.

1.3 THEN CHECK FOR JAUNDICE

Jaundice is a yellow discoloration of skin and mucus membranes. Many normal babies, particularly small babies (less than 2.5 kg at birth or born before 37 weeks of gestation), may have jaundice during the first week of life. This jaundice usually appears on the third or fourth day of life and occurs because the infant's liver is not fully mature to eliminate the bilirubin formed in the body. This type of jaundice is mild and disappears before the age of two weeks in full term and by the age of three weeks in preterm babies. It does not need any treatment.

Jaundice, that appears in less than 24 hours after birth is always due to an underlying disease. Deep jaundice that extends to the palms or soles can be severe and requires urgent treatment. If not treated, it may damage the young infant's brain. Jaundice that persists beyond the age of three weeks needs further investigation.

1.3.1 CHECK THE YOUNG INFANT FOR JAUNDICE

Assess every young infant for jaundice as described in the box below (on **page 2** of the Chart Booklet). It is important to look for jaundice in natural light. To look for jaundice, press the infant's skin over the forehead with your fingers to blanch, remove your fingers and look for yellow discolouration. If there is yellow discoloration, the infant has jaundice. To assess for severity, repeat the process over the palms and soles.

ASK:	LOOK AND FEEL:
• When did jaundice first appear?	• Look for jaundice (yellow skin). • Look at the young infant's palms and soles. Are they yellow?

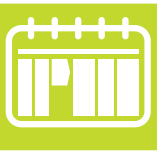
1.3.2 CLASSIFY JAUNDICE

A young infant who is less than 24 hours of age and has jaundice should be classified as SEVERE JAUNDICE. Any young infant who has yellow palms or soles is also classified as having SEVERE JAUNDICE. These infants require urgent referral to hospital.

Young infants with jaundice who are more than 24 hours old and do not have yellow palms or soles should be classified as having JAUNDICE. They can be treated at home.

If the young infant with JAUNDICE is older than 3 weeks, refer to a hospital for assessment. A young infant who has no jaundice gets the classification NO JAUNDICE.

This is shown in the classification table.



PLEASE OPEN YOUR CHART BOOKLET ON PAGE 2 AND READ THE RIGHT HALF OF THE PAGE (COLOURED BOXES)

1.4 THEN ASK: DOES THE YOUNG INFANT HAVE DIARRHOEA?

If the mother says that the young infant has diarrhoea, assess and classify for dehydration. The normally frequent, loose or semi-solid stools of a breastfed young infant are not diarrhoea. The mother of a breastfed young infant can recognize diarrhoea because the consistency or frequency of the stools is different than normal. A young infant has diarrhoea if the stools have changed from usual pattern and are more frequent than usual, and are watery (more water than faecal matter). The assessment is similar to the assessment of diarrhoea for an older infant or young child, but thirst is not assessed because it is not possible to distinguish thirst from hunger in a young infant.

1.4.1 ASSESS AND CLASSIFY DIARRHOEA

Read the steps to assess the child for dehydration **if** the child has diarrhoea:

IF YES, LOOK AND FEEL:

- Look at the young infant's general condition:
  - Is the infant restless and irritable?
- Infant's movements
  - Does the infant move only when stimulated but then stops?
  - Does the infant not move at all?
- Look for sunken eyes.
- Pinch the skin of the abdomen. Does it go back:
  - Very slowly (longer than 2 seconds)?
  - Slowly?

LOOK at the young infant's general condition: Is the infant restless and irritable?

An infant has the sign restless and irritable if the infant is restless and irritable all the time or every time he is touched and handled. If an infant is calm when breastfeeding but again restless and irritable when he stops breastfeeding, he has the sign "restless and irritable". A healthy infant will be consoled when put on the breast.

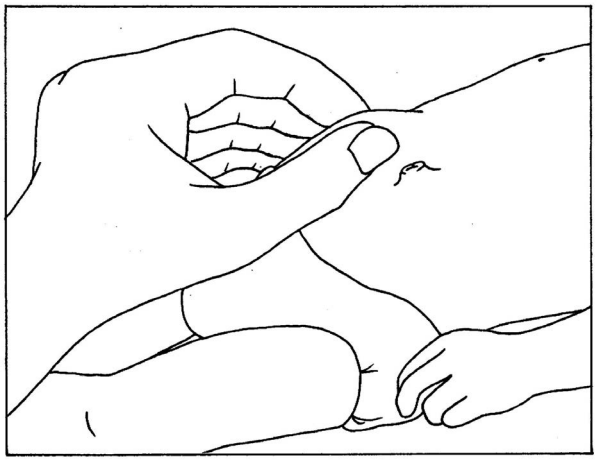
LOOK at the young infant's movements: Does the young infant move on his or her own? Does the infant move only when stimulated but then stops? Does the infant not move at all?

When you check for possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection, you observe the infant's movements. If the infant moves only when stimulated and then stops moving, or does not move at all, it is a sign of a severe condition. An infant who cannot be woken up even after stimulation should also be considered to have this sign.

LOOK for sunken eyes

The eyes of a dehydrated infant may look sunken. In a low-weight infant, the eyes may always look sunken, even if the young infant is not dehydrated. Even though the sign "sunken eyes" is less reliable in a low-weight infant, it can still be used to classify the young infant's dehydration.

PINCH the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds)? Slowly? Or immediately?



Locate the area on the infant's abdomen halfway between the umbilicus and the side of the abdomen. To do the skin pinch, use your thumb and first finger. Do not use your fingertips because this will cause pain. Place your hand so that when you pinch the skin, the fold of skin will be in a line up and down the child's body and not across the child's body. Firmly pick up all of the layers of skin and the tissue under them. Pinch the skin for one second and then release it. When you release the skin, look to see if the skin pinch goes back:

- very slowly (longer than 2 seconds)
- slowly
- immediately

If the skin stays up for even a brief time after you release it, decide that the skin pinch goes back slowly.

1.4.2 CLASSIFY DIARRHOEA FOR DEHYDRATION

To classify dehydration, compare the infant's signs to the signs listed in the chart and choose one classification for dehydration.

If the young infant has two or all three of the signs in the pink row, classify the infant as having SEVERE DEHYDRATION. This young infant needs fluids quickly and requires immediate intravenous infusion, or nasogastric or oral fluid replacement, as described in Plan C in the Chart Booklet on **page 12**.

If the young infant has two or all three signs in the yellow row, classify the infant as having SOME DEHYDRATION. Remember that if a young infant has one sign in the pink (top) row of the IMCI chart and one sign in the yellow (middle) row, this infant should also be classified as having SOME DEHYDRATION. This young infant requires oral treatment with ORS solution, as described in Plan B in the Chart Booklet on **page 11**.

A young infant who does not have enough signs to be classified as having SOME or SEVERE DEHYDRATION is classified as having NO DEHYDRATION. This young infant needs more fluid than usual to prevent dehydration, and thus needs home treatment, as described in Plan A in the Chart Booklet on **page 11**.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 3 AND READ THE RIGHT HALF OF THE PAGE (COLOURED BOXES)

1.5 THEN CHECK THE YOUNG INFANT FOR HIV INFECTION

Always check ALL young infants for HIV infection to identify children who are born from HIV positive mothers so that they could be followed up regularly and managed appropriately.

Different tests are available to diagnose HIV infection. Before you learn how to assess and classify a young infant for HIV infection, it may help you to understand the different tests which detect antibodies and tests which detect the virus itself, and how to understand the results of these tests.

HIV virological tests

HIV virological tests such as DNA or RNA PCR detect the virus itself. The virological test is done any time from birth. It is also used as a confirmatory test for HIV for children below 18 months.

- A positive virological test at any age means the child is infected.
- A negative virological test in a child who has not breastfed in the last 6 weeks means the child is not infected. For a child who is still breastfeeding, a negative result needs to be confirmed once breastfeeding has been discontinued for more than 6 weeks because of possible infection through breastfeeding.

HIV antibody (serological) tests

Serological HIV antibody tests including rapid tests detect antibodies, not the virus itself. Babies of infected mothers are born with antibodies in their blood, transferred passively through the placenta. During the first months of life, maternal HIV antibodies cannot be distinguished from those that the infant may have produced. Maternal antibodies can persist in the child until the age of 18 months. This means that a serological test in children under the age of 18 months is not a reliable way to check for infection of the child.

- A POSITIVE serological test:
  - in a child under the age of 18 months means that either mother's or child's HIV antibodies are present – the child has been exposed to HIV but is not necessarily infected himself or herself.
  - in a child aged 18 months or more means that the child is infected.
- A NEGATIVE serological test means that the child is NOT infected. For a child who is still breastfeeding, a negative result needs to be confirmed once breastfeeding has been discontinued for more than 6 weeks because of possible infection through breastfeeding.

It is very important that young infants with HIV are identified as early as 4–6 weeks after delivery using virological (PCR) test. These infants may look well, but can become ill and die very quickly.

All children born to HIV-infected mothers should be tested for HIV infection using a virological test. Early identification allows the infant to benefit from ART and other treatments. If virological test is not available in your area of service, serological (antibody) test needs to be done if the infant shows signs and symptoms suggestive of HIV infection or around 9 month of age if the infant is well.

1.5.1 CHECK THE YOUNG INFANT FOR HIV INFECTION

The assessment and classification of HIV infection in young infants is based on HIV test results. The steps to check the young infant are shown on **page 4** of the Chart Booklet, as shown below.

ASK:

- Has the mother had an HIV test?

  If yes:

  – Serological test POSITIVE or NEGATIVE?

- Has the infant had an HIV test?

  If yes:

  – Virological test POSITIVE or NEGATIVE?
  – Serological test POSITIVE or NEGATIVE?

  If no:

  – Mother or infant HIV test not done

If the mother is HIV positive and the infant does NOT have a positive virological test, ASK:

– Is the infant breastfeeding now?
– Was the young infant breastfeeding at the time of the test or before it?
– Is the mother on treatment and the infant on antiretroviral prophylaxis?

ASK the mother about HIV test

Ask the mother: "Do you have road to health card and antenatal card?" (These cards may be called differently in your country.)

If yes, look at the cards to see if the mother or young infant have been tested for HIV, and, if yes, LOOK:

- Has the mother had a serological test? If yes, is it POSITIVE or NEGATIVE?
- Has the young infant had a virological (PCR) test? If yes, is it POSITIVE or NEGATIVE?
- Has the young infant had a serological test? If yes, is it POSITIVE or NEGATIVE?
- If the mother does not have the cards, ASK her: "Have you or the infant been tested for HIV infection?"
- If yes, ASK: "What was the result of your test?" "What was the result of the infant's test?"
- If the infant has been tested and the test is positive, try to find out what test was used (virological test – PCR test or serological test – antibody test).

Remember that this is sensitive information, and that it is important to ensure confidentiality. You will need to ask further questions, based on the answer to this question. All mothers should have been offered testing during their pregnancy. Remember that a mother may have tested negative in the past, and could now be HIV infected. The more recent the test, the more likely it is to be accurate.

If the test has been sent but no result is available, you should try to obtain the test results. You may need to send another specimen, if necessary.

If the mother is HIV positive, and the infant does NOT have a POSITIVE virological test, ASK about breastfeeding and ARV treatment and prophylaxis.

ASK the mother:

"Is the infant breastfeeding now?"

"Was the infant breastfeeding at the time of test or before it?"

"Are you on ARV treatment? Is the infant on ARV prophylaxis?"

As HIV can be transmitted through breast milk, a child who has initially tested negative may still develop HIV infection. It is therefore important to know if the child was breastfeeding or had been breastfed in the six weeks before the test was done. Six weeks is considered the "window period" or time during which a patient may test negative even though they are infected. Antiretroviral (ARV) prophylaxis is recommended to minimalize the HIV mother-to-child transmission.

1.5.2 CLASSIFY HIV INFECTION

Based on the results of HIV test, the young infant should be classified as follows:

If the young infant has a positive virological test, classify the young infant as CONFIRMED HIV INFECTION. This infant needs cotrimoxazole prophylaxis, antiretroviral treatment (ART), and HIV care as per national recommendations.

If the young infant has a positive serological test OR if the mother is HIV positive AND the young infant has a negative virological test but is breastfeeding or stopped breastfeeding less than 6 weeks ago, OR if the mother is HIV positive AND the young infant has not yet been tested, classify the young infant as HIV EXPOSED: POSSIBLE HIV INFECTION. This infant needs cotrimoxazole and ARV prophylaxis as per national recommendations. If the infant has not yet been tested, do a virological test. If virological test is negative, repeat test 6 weeks after the breastfeeding stopped. If serological test is positive, do a virological test as soon as possible.

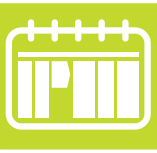
If HIV test has not been done for mother or infant, classify the young infant as HIV INFECTION STATUS UNKNOWN. Initiate HIV testing and counselling. First conduct serological HIV test for the mother. If the mother is HIV-NEGATIVE, do not test the infant. If the mother is HIV-POSITIVE, conduct virological HIV test for the young infant. If the mother is not available, perform virological test for the infant.

A virological test (PCR) is the only reliable method to determine the child's HIV status below 18 months of age. It detects the actual virus in the child's blood. There are two points to remember about confirming a young infant's or a child's HIV test:

- Confirmatory tests are required to confirm HIV infection after a POSITIVE result.
- Breastfeeding can transmit HIV, so a result cannot be confirmed unless a test is conducted at least 6 weeks after a breastfeeding has stopped.

If the mother's HIV test or the young infant's virological test is negative, classify the young infant as HIV INFECTION UNLIKELY.

This is shown in the classification table.



PLEASE OPEN YOUR CHART BOOKLET ON PAGE 4 AND READ THE RIGHT HALF OF THE PAGE (COLOURED BOXES)

EXERCISE B

In this exercise you will practice recording assessment results on a Young Infant IMCI Recording Form. You will classify the infants for possible serious bacterial infection or very severe disease, pneumonia, local bacterial infection, jaundice, diarrhoea, and HIV. Get 7 blank Young Infant IMCI Recording Forms from your facilitator. Also, turn to **page 1** in the Chart Booklet to begin.

To do each case:

1. Label a Young Infant IMCI Recording Form with the young infant's name.
2. Read the case information. Write the infant's age, weight, temperature and problem. Check "Initial Visit". (All the infants in this exercise are coming for an initial visit.)
3. Record the assessment results on the form.
4. Classify the infant for possible serious bacterial infection or very severe disease, pneumonia, local bacterial infection, jaundice, diarrhoea and HIV. Record the classifications in the column "Classify."
5. Then go to the next case.

Case 1: HENRI

Henri was born 6 hours ago at home. His weight is 3.0 kg. His axillary temperature is 36.5°C. He is brought to the health facility because he did not cry immediately after birth and is having difficulty breathing. The health worker first checks the young infant for signs of possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. The father says that the young infant has not had convulsions and is not feeding well. The health worker counts 74 breaths per minute. He repeats the count. The second count is 70 breaths per minute. He finds that the young infant has severe chest indrawing. The young infant moves only when he is stimulated. The umbilicus is normal, and there are no skin pustules. There is no jaundice. The young infant does not have diarrhoea. The mother tested for HIV during pregnancy and was negative.

Case 2: SASHIE

Sashie is 1 week old. Her weight is 3.4 kg. Her axillary temperature is 37°C. Her mother brought her to the clinic because she has a rash. The health worker assesses for signs of possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. Sashie's mother says that there were no convulsions and that the infant is feeding well. Sashie's breathing rate is 55 per minute. She has no chest indrawing. Her umbilicus is normal. The health worker examines her entire body and finds a red rash with a few skin pustules on her buttocks. She is awake and has spontaneous movements. She has no jaundice and no diarrhoea. The mother tested for HIV during pregnancy and was negative.

Case 3: EBAI

Ebai is a young infant who was born exactly 2 weeks ago. His weight is 3.5 kg. His axillary temperature is 36.5° C. His mother says that he had fast breathing. She says he has had no convulsions and is feeding well. The health worker counts his breathing and finds he is breathing 65 breaths per minute. A repeat count is 70 breaths per minute. He has no chest indrawing. The health worker looks over his entire body and finds no skin pustules, and the umbilicus is normal. He is awake and playful and is moving normally. The colour of the skin is normal. He does not have diarrhoea. The mother tested for HIV during pregnancy and was negative.

Case 4: ROBERT

Robert is one week old. His weight is 2.2 kg. His axillary temperature is 36°C. His mother has brought him because she noted that the colour of the skin has changed in the last 2 days. The health worker assesses for signs of possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. The mother says that Robert has not had convulsions and is feeding well. The frequency of breathing is 58 per minute. There is no chest indrawing. Umbilicus is normal and there are no pustules on the skin. The health worker saw that Robert was moving normally. In the examination of the body, the health worker finds that the skin is yellow. The palms and soles are also yellow. He has no diarrhoea. His mother is HIV positive. Robert has not had any HIV test.

Case 5: ALICE

Alice is 10 days old. Her weight is 3.2 kg. Her axillary temperature is 36.7°C. She was born at home. The mother says that she was fine although she noted that the infant's eyes were rather yellow from the third day of life and are still yellowish. The health worker assesses the young infant for signs of possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. The mother says that Alice has not had convulsions and is feeding well. Her breathing rate is 52 per minute. There is no chest indrawing. The umbilicus looks normal. There are no pustules on the skin. She moves normally during the examination. The health worker confirms the skin is somewhat yellow, but he does not find any yellow discoloration in the palms or soles. Alice has no diarrhoea. The mother tested for HIV during pregnancy and was negative.

Case 6: JENNA

Jenna is 7 weeks old. Her weight is 3 kg. Her axillary temperature is 36.4°C. Her mother has brought her because she has diarrhoea. The health worker first assesses her for signs of possible serious bacterial infection or very severe disease, pneumonia, and local bacterial infection. Her mother says that she has not had convulsions and is breastfeeding well. Her breathing rate is 50 per minute. She was sleeping in her mother's arms but awoke when her mother unwrapped her. She has slight chest indrawing. Her umbilicus is not red or draining pus. She has a rash in the area of her diaper, but there are no pustules. There are no signs of jaundice in the skin. She is crying and moving her arms and legs.

When the health worker asks the mother about Jenna's diarrhoea, the mother replies that it began 3 days ago. Jenna is still crying. She stopped once when her mother put her to the breast. She began crying again when she stopped breastfeeding. Her eyes look normal, not sunken. When the skin of her abdomen is pinched, it goes back slowly.

Jenna's mother has HIV and took ARV's during pregnancy. Jenna is on ARV prophylaxis but she has not been tested for HIV.

Case 7: NEERA

Neera is 3 weeks old. Her weight is 4.2 kg. Her axillary temperature measures 36.2°C. Her mother brought her to the clinic because she has stopped feeding well and seems very sick. When the health worker asks the mother if Neera has had convulsions, she says no. The health worker counts 50 breaths per minute. Neera has no chest indrawing. The mother says that Neera has not been feeding well since yesterday.. Her umbilicus is red and is draining pus. There are no pustules on her body. Neera made a few movements during the assessment and moves slightly more on stimulation. The colour of the skin is normal. Neera does not have diarrhoea. Neera's mother does not have HIV.

When you have completed this exercise, please discuss your answers with a facilitator.

EXERCISE C

PART 1

You will watch a video demonstration "How to Check for Jaundice".

Optionally, you may also watch the video exercises on assessing and classifying dehydration.

PART 2

This part of exercise is a video case study of a young infant. You will practice assessing and classifying the young infant for Possible Serious Bacterial Infection or Very Severe Disease, Pneumonia or Local Bacterial Infection, Jaundice, and Diarrhoea.

Write your assessment results and the infant's classifications on the recording form that is on the next page.

IMCI Recording Form: MANAGEMENT OF THE SICK YOUNG INFANT AGE BIRTH UP TO 2 MONTHS

Name:_____Age:_____Sex:_____Weight:_____Temperature:_____

ASK: What are the infant's problems?_____Initial visit?_____Follow-up Visit?_____

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

CHECK FOR POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE or PNEUMONIA or LOCAL BACTERIAL INFECTION

- Is the infant having difficulty feeding?
- Has the infant had convulsions?
- Count the breaths in one minute._____breaths per minute
  Repeat if (≥ 60) elevated_____Fast breathing?
- Look for severe chest indrawing
- Measure temperature
  High body temperature (temperature ≥ 38°C) or
  Low body temperature (below 35.5°C)
- Look at young infant's movements.
  Does the infant move only when stimulated?
  Does the infant not move at all?
- Look at umbilicus. Is it red or draining pus?
- Look for skin pustules

CHECK FOR JAUNDICE

- Is skin yellow?
  And infant is less than 24 hours of age?
- Are the palms or soles yellow?

DOES THE YOUNG INFANT HAVE DIARRHOEA?
Yes_____No_____
If yes, ASK:

- Look at the young infant's general condition.
  Is the infant restless and irritable?
  Does the infant move only when stimulated?
  Does the infant not move at all?
- Look for sunken eyes.
  Pinch the skin of the abdomen. Does it go back:
  Very slowly (longer than 2 seconds)? Slowly?

CHECK FOR HIV INFECTION

ASK: HIV status of the mother? Positive_____Negative_____Unknown_____
HIV serological test of the infant? Positive_____Negative_____Unknown_____
HIV virology test of the infant? Positive_____Negative_____Unknown_____

THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT FOR AGE

- Is the infant breastfed? Yes_____No_____
  If Yes, how many times in 24 hrs?_____times
- Does the infant receive any other foods or drinks?
  Yes_____No_____
  If Yes, how often?_____times
  If yes, what do you use to feed the infant?
- Determine weight for age.
  Very low weight for age (<2 kg)_____
  Low weight for age (< -2 Z score)_____
  NOT low weight for age_____
- Look for ulcers or white patches in the mouth (thrush).

If the infant has **any difficulty feeding,** is **feeding < 8 times in 24 hours,** is **taking any other food or drinks,** or is **low weight for age, AND has no indications to refer urgently to hospital: ASSESS BREASTFEEDING**:

- Has the infant breastfed in the previous hour?
- If infant has not fed in the previous hour, ask the mother to put her infant to the breast. Observe the breastfeed for 4 minutes.
- If the infant was fed during the last hour, ask the mother if she can wait and tell you when the infant is willing to feed again.

- Is the infant able to attach? To check attachment, look for:
  - More areola seen above than below the mouth Yes____No____
  - Mouth wide open Yes_____No_____
  - Lower lip turned outward Yes_____No_____
  - Chin touching breast Yes_____No_____

  Good attachment_____Poor attachment_____
  No attachment at all_____
- Is the infant suckling effectively (that is, slow deep sucks, sometimes pausing)?
  Suckling effectively_____not suckling effectively_____
  not suckling at all_____

CHECK THE YOUNG INFANT'S IMMUNIZATION STATUS Circle immunizations needed today.

Return for next immunization on:

BCG Hep B0 OPV0 DPT1+Hib1+Hep B1 OPV-1 Rotavirus-1 PCV-1

ASSESS OTHER PROBLEMS:

COUNSEL THE MOTHER ABOUT HER OWN HEALTH

1.6 THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT FOR AGE IN BREASTFED INFANTS

Adequate feeding is essential for growth and development. Poor feeding during infancy can have lifelong effects. Growth is assessed by determining weight for age. It is important to assess a young infant's feeding and weight so that feeding can be improved if necessary.

The best way to feed a young infant is to breastfeed exclusively. Exclusive breastfeeding means that the infant takes only breastmilk, and no additional food, water or other fluids. (Medicines and vitamins are exceptions.)

Exclusive breastfeeding gives a young infant the best nutrition and protection from disease. If mothers understand that **exclusive** breastfeeding gives the best chances of good growth and development, they may be more willing to breastfeed. They may be motivated to breastfeed to give their infants a good start in spite of social or personal reasons that make exclusive breastfeeding difficult or undesirable.

Assess for breastfeeding **only** if the infant does not have any indication to refer urgently to hospital. The assessment has two parts. In the first part, you ask the mother questions. You determine what the young infant is fed and how often. You also determine weight for age and look for the presence of ulcers or white patches in the mouth. In the second part, you assess how the infant breastfeeds. If the infant is not breastfed, use a different chart. See the next chapter and **page 6** of the Chart Booklet.

1.6.1 ASK ABOUT FEEDING, DETERMINE WEIGHT FOR AGE AND LOOK FOR THRUSH

The first part of the assessment is shown below.

ASK:	LOOK AND FEEL:
• Is the infant breastfed? If yes, how many times in 24 hours? • Does the infant receive any other foods or drink? – If yes, how often? – What do you use to feed the infant?	• Determine weight for age. – Weight less than 2 kg? – Weight for age less than -2 Z score • Look for ulcers or white patches in the mouth (thrush).

ASK: Is the infant breastfed? If yes, how many times in 24 hours?

The recommendation is that the young infant be breastfed as often and for as long as the infant wants, day and night. This should be 8 or more times in 24 hours.

ASK: Does the infant usually receive any other foods or drinks? If yes, how often?

A young infant should be exclusively breastfed. Find out if the young infant is receiving ***any*** other foods or drinks such as other milk, juice, tea, thin porridge, dilute cereal, or even water. Ask how often he receives it and the amount. You need to know if the infant is mostly breastfed, or mostly fed on other foods.

ASK: If yes, what do you use to feed the infant?

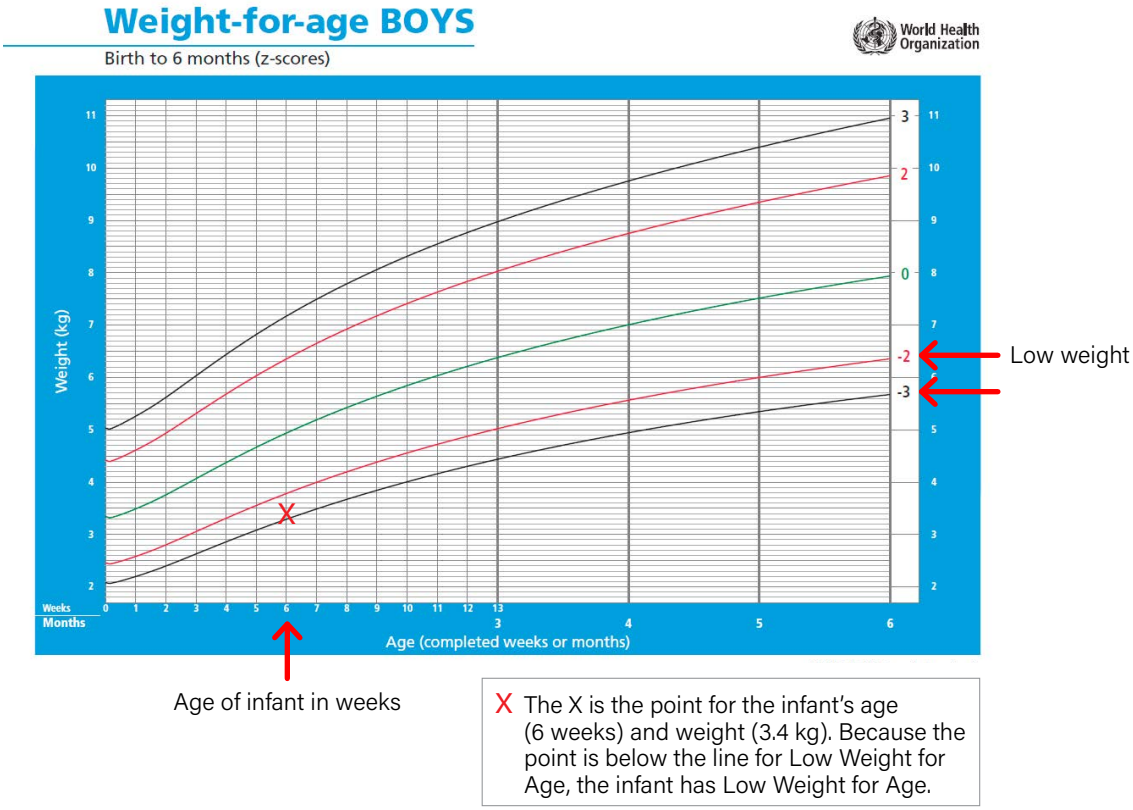
If the infant takes other foods or drinks, find out if the mother uses a feeding bottle or cup.

LOOK: Determine weight for age.

Weigh the young infant and note the weight. Use the appropriate weight for age chart for boys or girls to determine if the young infant is low weight for age (below the line for -2 Z-score). A young infant who is less than 7 days old and weighs less than 2 kg is considered very low weight.

Remember that the age of a young infant on the Weight for Age chart is in weeks up to 3 months and in months for older infants and children. Some young infants who are low weight for age were born with low birth weight. Some did not gain weight well after birth. Low weight infants are particularly likely to have a problem with breastfeeding.

EXAMPLE: A young male infant is 6 weeks old and weighs 3.4 kg. Here is how the health worker checked if the infant was low weight for age.



X The X is the point for the infant's age (6 weeks) and weight (3.4 kg). Because the point is below the line for Low Weight for Age, the infant has Low Weight for Age.

LOOK for ulcers or white patches in the mouth (thrush).

Look inside the mouth at the tongue and inside of the cheek. Thrush looks like milk curds on the inside of the cheek, or a thick white coating of the tongue. Try to wipe the white off. The white patches of thrush will remain.

Your facilitator will lead a drill to give you practice reading a weight for age chart for a young infant.

1.6.2 ASSESS BREASTFEEDING (IF THE INFANT IS BREASTFED)

ASSESS BREASTFEEDING:

• Has the infant breastfed in the previous hour?

If the infant has not fed in the previous hour, ask the mother to put the infant to her breast. Observe the breastfeed for 4 minutes.

(If the infant was fed during the previous hour, ask the mother whether she can wait and tell you when the infant is willing to feed again.)

• Is the infant well attached?

Good attachment *Poor attachment* *No attachment at all*

TO CHECK ATTACHMENT, LOOK FOR:

- *More areola seen above infant's top lip than below bottom lip*
- *Mouth wide open*
- *Lower lip turned outwards*
- *Chin touching breast*

(All of these signs should be present if the attachment is good).

• Is the infant sucking effectively (that is, slow deep sucks, sometimes pausing)?

Sucking effectively *Not sucking effectively* *Not sucking at all*

➜ Clear a blocked nose if it interferes with breastfeeding.

Assessing breastfeeding requires careful observation.

ASK: Has the infant breastfed in the previous hour?

If so, ask the mother to wait and tell you when the infant is willing to feed again. In the meantime, complete the assessment by assessing the infant's immunization status. You may also decide to begin any treatment that the infant needs, such as giving an antibiotic for LOCAL BACTERIAL INFECTION or ORS solution for SOME DEHYDRATION.

If the infant has not fed in the previous hour, he may be willing to breastfeed. Ask the mother to put her infant to the breast. Observe a whole breastfeed if possible, or observe for at least 4 minutes.

Sit quietly and watch the infant breastfeed.

LOOK: Is the infant well attached?

The four signs of good attachment are:

- more areola seen above infant's top lip than below bottom lip
- mouth wide open
- lower lip turned outwards
- chin touching breast

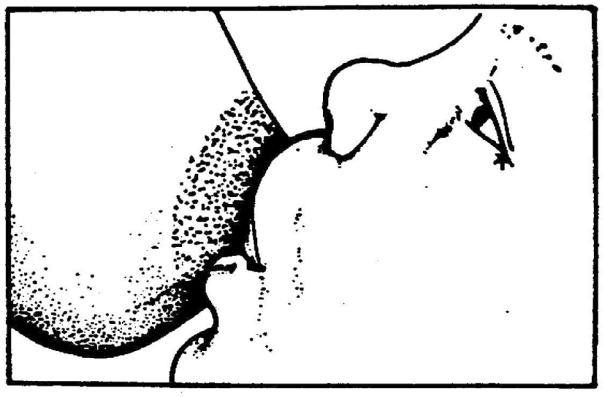
If all of these four signs are present, the infant has ***good attachment***.

If attachment is not good, you may see:

- more areola (or equal amount) seen below infant's bottom lip than above top lip
- mouth not wide open, lips pushed forward
- lower lip turned in, or
- chin not touching breast

If you see any of these signs of poor attachment, the infant is ***not well attached***. If an infant is not well attached, the results may be pain and damage to the nipples. Or the infant may not remove breastmilk effectively which may cause engorgement of the breast. The infant may be unsatisfied after breastfeeds and want to feed very often or for a very long time. The infant may get too little milk and not gain weight, or the breastmilk may dry up. All these problems may improve if attachment can be improved.

A young infant ***well attached to his mother's breast***



A young infant ***poorly attached to his mother's breast***

LOOK: Is the infant suckling effectively? (that is, slow deep sucks, sometimes pausing)

The infant is **suckling effectively** if he suckles with slow deep sucks and sometimes pauses. You may see or hear the infant swallowing. If you can observe how the breastfeed finishes, look for signs that the infant is satisfied. If satisfied, the infant releases the breast spontaneously (that is, the mother does not cause the infant to stop breastfeeding in any way). The infant appears relaxed, sleepy, and loses interest in the breast.

An infant is **not suckling effectively** if he is taking only rapid, shallow sucks. You may also see indrawing of the cheeks. You do not see or hear swallowing. The infant is not satisfied at the end of the feed, and may be restless. He may cry or try to suckle again, or continue to breastfeed for a long time.

If a blocked nose seems to interfere with breastfeeding, clear the infant's nose. Then check whether the infant can suckle more effectively.

If the infant is not attaching well or is suckling poorly, you will help the mother to improve positioning and attachment (*you will learn how to do this later in this module*). If the infant is **still** not suckling well, this infant should be referred urgently to hospital.

EXERCISE D

PART 1 – VIDEO

This video will show how to check for a feeding problem and assess breastfeeding. It will show the signs of good and poor attachment and effective and ineffective suckling.

PART 2 – PHOTOGRAPHS

In this exercise you will practice recognizing signs of good and poor attachment during breastfeeding as shown on video.

1. Study photographs numbered 13 through 17 of young infants at the breast. Look for each of the **signs** of good attachment. Compare your observations about each photograph with the answers in the chart below to help you learn what each sign looks like. Notice the **overall** assessment of attachment.
2. Now study photographs 18 through 21. In each photograph, look for each of the **signs** of good attachment and mark on the chart whether each is present. Also write your overall assessment of attachment.

	SIGNS OF GOOD ATTACHMENT					
PHOTO	More Areola seen above infant's top lip than below bottom lip	Mouth Wide Open	Lower Lip Turned Outwards	Chin touching breast	ASSESSMENT	COMMENTS
13	yes	yes	yes	yes (almost)	Good attachment	
14	no (equal above and below)	no	yes	no	Not well attached	
15	yes	no	no	yes	Not well attached	Lower lip turned in
16	No	no	no	no	Not well attached	Cheeks pulled in
17	cannot see	yes	yes	yes	Good attachment	
18						
19						
20						
21						

3. Study photographs 22 and 23. These photographs show white patches (thrush) in the mouth of an infant.

When you have finished assessing the photographs, discuss your answers with a facilitator.

1.7 THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT FOR AGE IN INFANTS RECEIVING NO BREASTMILK

Page 6 in the Chart Booklet is the alternative to use only if the infant is NOT breastfed. The steps to check the infant receiving no breastmilk are explained below the box.

ASK:

- What milk are you giving?
- How many times during the day and night?
- How much do you give at each feed?
- How do you prepare the milk?
  - Let the mother demonstrate or explain how she prepares a feed and how she gives it to the infant.
- How is the milk given? Cup or bottle?
- How do you clean the feeding utensils?
- Do you give any breastmilk at all?
- What foods and fluids do you give in addition to replacement feeds?

LOOK, LISTEN, FEEL:

- Determine the weight for age.
  - Weight less than 2 kg?
  - Weight for age less than -2 Z score?
- Look for ulcers or white patches in the mouth (thrush).

ASK: What milk are you giving?

Ask the mother questions to determine what replacement milk or milks are used. It may be a breastmilk replacement, animal milk or some other fluid or some combination.

ASK: How many times during the day and night?

A young infant up to one month of age should be fed 8 times and a young infant between 1 and 2 months of age 7 times in 24 hours.

ASK: How much is given at each feed?

A young infant up to one month of age should be given approximately 60 ml and a young infant between 1 and 2 months of age approximately 90 ml at each feed. It is helpful to have common bottles or cups available so that a mother can show you the amount that she gives.

ASK: How are you preparing the milk? How is the milk being given? Cup or bottle?

Let mother demonstrate or explain how a feed is prepared, and how it is given to the infant.

ASK: How are you cleaning the feeding utensils?

Improperly cleaned utensils are a common source of contamination of replacement feeds.

ASK: Are you giving any breastmilk at all?

ASK: What foods and fluids in addition to replacement feeds are given?

If the mother answers yes, let her describe what foods or fluids she is giving to the young infant.

LOOK: Determine weight for age.

Use a weight-for-age chart to determine whether the young infant is low weight for age as described for breastfed infant in the previous section of this chapter.

LOOK for ulcers or white patches in the mouth (thrush).

Look for thrush as described for breastfed infant in the previous section of this chapter.

1.8 CLASSIFY FEEDING PROBLEM OR LOW WEIGHT FOR AGE OR VERY LOW WEIGHT

If you have already found that the infant has any indications to refer urgently to hospital, do not classify for feeding problem or low weight for age.

Compare the young infant's signs to the signs listed in each row and choose the appropriate classification.

PLEASE OPEN YOUR CHART BOOKLET ON PAGES 5 AND 6

VERY LOW WEIGHT

This classification includes infants less than 7 days old whose weight is less than 2 kg. These infants are very likely to have problems maintaining their body temperature and feeding adequately. They should be referred to hospital for kangaroo mother care (KMC).

Infants older than 7 days weighing less than 2 kg are classified as LOW WEIGHT and treated accordingly – see below.

FEEDING PROBLEM OR LOW WEIGHT FOR AGE

This classification includes infants who are low weight for age (weight below the line for -2 Z-score) or infants who have some sign that their feeding needs improvement. They are likely to have more than one of these signs.

For the breastfed infant: Advise the mother of any young infant in this classification to breastfeed as often and for as long as the infant wants, day and night. Short breastfeeds are an important reason why an infant may not get enough breastmilk. The infant should breastfeed until he is satisfied; only when a breast gives no more milk, should the infant be switched to the other breast. Advise the mother to give only breastmilk and no other food or drink.

Teach each mother about any specific help her infant needs, such as better positioning and attachment for breastfeeding. If the infant is still not able to attach well, teach the mother how to express breastmilk and feed by a cup.

For the infant receiving no breastmilk: Counsel the mother of any young infant in this classification as needed, to address the particular feeding problems such as inappropriate or insufficient replacement feeds. If there is any problem with unhygienically prepared milk or unclean utensils, explain the guidelines for safe replacement feeding. If the mother is using a bottle, teach cup feeding. Identify concerns of the mother and family about feeding and discuss these.

For all infants in this classification: If the infant has low weight, advise the mother how to feed and keep the low weight infant warm at home. If the infant has thrush, teach the mother how to treat thrush at home. Also advise the mother how to give home care for the young infant.

An infant in this classification needs to return to the health worker for follow-up. The health worker will check that the feeding is improving and give additional advice as needed.

NO FEEDING PROBLEM

A breastfed young infant in this classification is exclusively and frequently breastfed. An infant who receives no breastmilk in this category is receiving safe and adequate replacement feeds.

"Not low" weight for age means that the infant's weight for age is not below the line for -2 Z score or "Low Weight for Age." It is not necessarily normal or good weight for age, but the infant is not in the high risk category that we are most concerned with.

1.9 THEN CHECK THE YOUNG INFANT'S IMMUNIZATION STATUS

Use your country's recommended immunization schedule when checking the infant's immunization status. Check immunization status: Has the young infant received all the immunizations recommended for his age? Does the young infant need any immunization today?

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 7 AND READ ALL THE INFORMATION IN THE IMMUNIZATION STATUS BOX.

Do not give OPV 0 to an infant who is more than 14 days old. Do not give HepB0 to an infant who is more than 24 hours old. Therefore, if an infant has not received these vaccines by those times, wait until he is 6 weeks old. Then give DPT-1+ HIB-1, Hep B1, as well as OPV 1, Rotavirus 1 and Pneumococcal conjugate vaccine (PCV).

Give immunizations according to national guidelines also to young infants classified as CONFIRMED HIV INFECTION or HIV EXPOSED or HIV INFECTION STATUS UNKNOWN as for all other children except BCG. Young infants, who are HIV positive or of unknown HIV status with symptoms consistent with HIV should not be given BCG.

If young infant is going to be referred, do not immunize before referral. The staff at the referral site should make the decision about immunizing the infant when the infant is admitted. This will avoid delaying referral.

1.10 ASSESS OTHER PROBLEMS

Assess any other problems mentioned by the mother or observed by you. Refer to any guidelines on treatment of the problems. If you think the infant has a serious problem, or you do not know how to help the infant, refer the infant to a hospital.

1.11 ASSESS THE MOTHER'S HEALTH NEEDS

During a sick child visit, listen for any problems that the mother (or caregiver) herself may have. The mother may need treatment or referral for her own health problems. Write down her health concerns at the bottom of the recording form. This will remind you to help the mother after attending to her infant.

EXERCISE E

This exercise will continue the 7 cases begun in Exercise B. Refer to the *YOUNG INFANT* Chart Booklet and the Weight for Age charts as needed.

For each case:

1. Read the description of the rest of the assessment of the infant.
2. Use the Weight for Age chart to determine if the infant is low weight for age.
3. Classify feeding.
4. Check the infant's immunizations status. Record immunizations needed today and when the infant should return for the next immunization.

Case 1: HENRI

Henri was born 6 hours ago at home. His weight is 3.0 kg. His axillary temperature is 36.5°C. He is brought to the health facility because he did not cry immediately after birth and is having difficulty breathing. The health worker first checks the young infant for signs of POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, PNEUMONIA and LOCAL BACTERIAL INFECTION. The father says that the young infant has not had convulsions and is not feeding well. The health worker counts 74 breaths per minute. He repeats the count. The second count is 70 breaths per minute. He finds that the young infant has severe chest indrawing. The young infant moves only when he is stimulated. The umbilicus is normal, and there are no skin pustules. There is no jaundice. The young infant does not have diarrhoea. The mother tested for HIV during pregnancy and was negative.

The health worker does not assess Henri for FEEDING PROBLEM OR LOW WEIGHT and immunization status because the young infant has indications for urgent referral.

Case 2: SASHIE

Sashie is 1 week old. Her weight is 3.4 kg. Her axillary temperature is 37°C. Her mother brought her to the clinic because she has a rash. The health worker assesses for signs of possible serious bacterial infection or very severe disease and local bacterial infection. Sashie's mother says that there were no convulsions and that the infant is feeding well. Sashie's breathing rate is 55 per minute. She has no chest indrawing. Her umbilicus is normal. The health worker examines her entire body and finds a red rash with a few skin pustules on her buttocks. She is awake and has spontaneous movements. She has no jaundice and no diarrhoea. The mother tested for HIV during pregnancy and was negative.

When asked about feeding, the mother says that Sashie breastfeeds 9 or 10 times in 24 hours and drinks no other fluids. Then the health worker refers to Sashie's weight and age recorded

at the top of the recording form. He uses the Weight for Age chart to check Sashie's weight for age. The health worker assesses breastfeeding and finds that Sashie is well attached to the breast and is suckling effectively. There are no white patches in the mouth.

Sashie's mother has an immunization card. It shows that she received BCG, OPV 0 and HepB0 at birth in the hospital. When the health worker asks the mother if Sashie has any other problems, she says no.

Case 3: EBAI

Ebai is a young infant who was born exactly 2 weeks ago. His weight is 3.5 kg. His axillary temperature is 36.5°C. His mother says that he had fast breathing. She says he has had no convulsions and is feeding well. The health worker counts his breathing and finds he is breathing 65 breaths per minute. A repeat count is 70 breaths per minute. He has no chest indrawing. The health worker looks over his entire body and finds no skin pustules, and the umbilicus is normal. He is awake and playful and is moving normally. The colour of the skin is normal. He does not have diarrhoea. The mother tested for HIV during pregnancy and was negative.

Ebai's mother says that he breastfeeds 6 or 7 times in 24 hours. She has not given him any other milk or drinks. The health worker checks his weight for age.

The health worker then assesses breastfeeding. His mother says that Ebai is probably hungry now, and puts him to the breast. The health worker observes that more areola is visible above than below the mouth. Ebai's chin touches the breast, his mouth is wide open and his lower lip is turned outward. He is suckling with slow deep sucks, sometimes pausing. His mother continues feeding him until he is satisfied. The health worker sees no ulcers or white patches in his mouth.

Ebai has had no immunizations.

Case 4: ROBERT

Robert is one week old. His weight is 2.2 kg. His axillary temperature is 36°C. His mother has brought him because she noted that the colour of the skin has changed in the last 2 days. The health worker assesses for signs of possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. The mother says that Robert has not had convulsions and is feeding well. The frequency of breathing is 58 per minute. There is no chest indrawing. Umbilicus is normal and there are no pustules on the skin. The health worker saw that Robert was moving normally. In the examination of the body, the health worker finds that the skin is yellow. The palms and soles are also yellow. He has no diarrhoea. His mother is HIV positive. Robert has not had any HIV test.

The health worker decides not to assess breastfeeding or immunization, because the young infant has Severe Jaundice and should be referred urgently.

Case 5: ALICE

Alice is 10 days old. Her weight is 3.2 kg. Her axillary temperature is 36.7ºC. She was born at home. The mother says that she was fine although she noted that the infant's eyes were rather yellow from the third day of life and are still yellowish. The health worker assesses the young infant for signs of possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. The mother says that Alice has not had convulsions and is feeding well. Her breathing rate is 52 per minute. There is no chest indrawing. The umbilicus looks normal. There are no pustules on the skin. She moves normally during the examination. The health worker confirms the skin is somewhat yellow, but he does not find any yellow discoloration in the palms or soles. Alice has no diarrhoea. The mother tested for HIV during pregnancy and was negative.

Her mother says that she breastfeeds 6 or 7 times a day. She gives her only breastmilk. The health worker checks the weight for age.

The health worker asks the mother to breastfeed Alice. She is well attached to the breast and is suckling correctly. There are no white patches in the mouth. When asked about immunizations, the mother says that Alice was born at home and was not given any immunization.

Case 6: JENNA

Jenna is 7 weeks old. Her weight is 3 kg. Her axillary temperature is 36.4ºC. Her mother has brought her because she has diarrhoea. The health worker first assesses her for signs of possible serious bacterial infection or very severe disease and local bacterial infection. Her mother says that she has not had convulsions and is breastfeeding well. Her breathing rate is 50 per minute. She was sleeping in her mother's arms but awoke when her mother unwrapped her. She has slight chest indrawing. Her umbilicus is not red or draining pus. She has a rash in the area of her diaper, but there are no pustules. There are no signs of jaundice in the skin. She is crying and moving her arms and legs.

When the health worker asks the mother about Jenna's diarrhoea, the mother replies that it began 3 days ago. Jenna is still crying. She stopped once when her mother put her to the breast. She began crying again when she stopped breastfeeding. Her eyes look normal, not sunken. When the skin of her abdomen is pinched, it goes back slowly.

Jenna's mother has HIV. She took ARV's during pregnancy and Jenna is also taking them. She has not been tested for HIV.

When asked, Jenna's mother says that Jenna breastfeeds 3 times a day. She also takes a bottle of breastmilk substitute 3 times a day. The health worker checks her weight for age.

The health worker then assesses breastfeeding. Jenna has not fed in the previous hour. Her mother agrees to try to breastfeed now. The health worker observes that the same amount of areola is visible above and below the mouth. Jenna's mouth is not very wide open, and her lips are pushed forward. Her chin is not touching the breast. Her sucks are quick and are not deep.

When Jenna stops breastfeeding, the health worker looks in her mouth. He sees no ulcers or white patches in her mouth.

Jenna's mother has an immunization card. It shows that Jenna received BCG and OPV0 on the day after birth in the hospital. Her mother says that she has no other problems.

Case 7: NEERA

Neera is 3 weeks old. Her weight is 4.2 kg. Her axillary temperature measures 36.2°C. Her mother brought her to the clinic because she has stopped feeding well and seems very sick. When the health worker asks the mother if Neera has had convulsions, she says no. The health worker counts 50 breaths per minute. Neera has no chest indrawing. The mother says that Neera has not been feeding well since yesterday. Her umbilicus is red and is draining pus. There are no pustules on her body. Neera made a few movements during the assessment and moves slightly more on stimulation. The colour of the skin is normal. Neera does not have diarrhoea. Neera's mother does not have HIV.

Since Neera should be referred urgently, the health worker does not assess breastfeeding or immunization status.

When you have completed this exercise, please discuss your answers with a facilitator.

2. IDENTIFY APPROPRIATE TREATMENT

For each of the young infant's classifications, find the treatments recommended on the *YOUNG INFANT* charts.

2.1 DETERMINE IF THE YOUNG INFANT NEEDS URGENT REFERRAL

If the infant has any classification in a pink row, he or she usually needs urgent referral for hospital care.

For the following severe (pink) classifications , you will see the instruction "Refer urgently to hospital" ("Urgently" means refer the child immediately after giving any necessary pre-referral treatments. Do not give treatments that would unnecessarily delay referral):

- POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE
- SEVERE JAUNDICE
- SEVERE DEHYDRATION if the infant also has another severe classification
  If SEVERE DEHYDRATION is the young infant's only severe classification and if your clinic has the ability to treat the infant according to Plan C (see: Treat the Young Infant), you may keep and treat the infant. This infant may also have a red sign "movement only when stimulated or no movement at all" assessed in the box "Check for possible serious bacterial infection or pneumonia or local bacterial infection" related to dehydration because he or she is severely dehydrated. If the child has another severe classification in addition to SEVERE DEHYDRATION, you should urgently refer the infant.
- For VERY LOW WEIGHT the instruction says simply: "Refer to hospital". This means that referral is needed, but not as urgently. There is time to give all of the identified treatments before referral.

When you decide that a young infant needs urgent referral, begin talking to the mother about the need to take the infant for hospital care.

2.2 IDENTIFY URGENT, PRE-REFERRAL TREATMENT NEEDED

Before urgently referring a young infant to hospital, identify all appropriate pre-referral treatments. Urgent pre-referral treatments are listed for each classification in a pink row in bold

print on the chart. For any severe (pink) classification that you have written on the front of the recording form, quickly write the appropriate pre-referral treatments on the back of the form.

Of the classifications that require urgent referral, only the young infant who has POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE should receive a first dose of intramuscular antibiotics prior to referral. Young infants who are referred for POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, SEVERE JAUNDICE or VERY LOW WEIGHT should be treated to prevent low blood sugar; infant urgently referred for SEVERE DEHYDRATION should be given frequent sips of ORS and breastfeed on the way to hospital. Mothers of all referred infants should be taught how to keep the young infant warm on the way to the hospital.

Treatments for other classifications should not be given before urgent referral because they are not urgently needed and would delay referral. For example, do not teach a mother how to treat a local bacterial infection before referral. Do not give immunizations before referral.

2.3 IDENTIFY TREATMENTS FOR A YOUNG INFANT WHO DOES NOT NEED URGENT REFERRAL

Identify treatments for each classification by reading the chart. Classifications in yellow rows or green rows can be satisfactorily treated at home, with a follow-up visit to check that the infant is improving.

Classifications in yellow include:

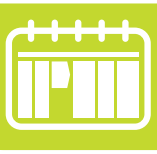
- PNEUMONIA (in infant 7 to 59 days old with fast breathing as the only sign of illness)
- LOCAL BACTERIAL INFECTION
- JAUNDICE
- SOME DEHYDRATION if the infant has no other severe classification
- CONFIRMED HIV INFECTION
- HIV EXPOSED: POSSIBLE HIV INFECTION
- HIV INFECTION: STATUS UNKNOWN
- FEEDING PROBLEM OR LOW WEIGHT FOR AGE

Classifications in green rows usually call for advising the mother about home care.

For **each** classification that you have written on the front of the recording form, record on the back of the form the treatments needed, advice to give the mother, and when to return for a follow-up visit. . If several different times are specified for follow-up, look for the earliest definite time. A definite time is one that is not followed by the word "if".

Follow-up visits are especially important for a young infant. If you find at the follow-up visit that the infant is worse, you will refer the infant to the hospital. You will find information about follow-up in several parts of the Chart Booklet. In the "Identify treatment" column of the classification tables, some classifications have instructions to tell the mother to return for

follow-up. The table Follow up Visit in the Advise the Mother to Give Home Care for the Young Infant box on **page 19** of the Chart Booklet summarizes the schedules for follow-up visits. For example a young infant with jaundice should return in one day; that means 24 hours later.



Specific instructions for conducting each follow-up visit are on page 21-24 in the Chart Booklet.

For all young infants who are not being referred to hospital, you should advise the mother when to return immediately. This means that you will have to teach the mother the signs that mean returning immediately for further care. These signs are listed on **page 19** of the Chart Booklet. Use local terms that the mother will understand.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 19 AND READ THE INFORMATION ON WHEN TO RETURN AND WHEN TO RETURN IMMEDIATELY

3. TREAT THE SICK YOUNG INFANT WHO NEEDS URGENT REFERRAL

The sick young infant with a severe disease classification is at risk of death and needs to have treatment immediately. The best treatment option for the sick young infant with severe signs is at hospital level. Health workers need to use good counselling and negotiation skills when talking to and supporting caregivers to accept referral.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 8 WHERE THE STEPS FOR TREAT THE SICK YOUNG INFANT ARE DESCRIBED. THERE ARE STEPS YOU FOLLOW WHEN REFERRING THE YOUNG INFANT.

3.1 GIVE URGENT PRE-REFERRAL TREATMENTS

Below are the urgent pre-referral treatments for a young infant:

1. Give first dose of intramuscular antibiotics if the infant has the classification POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE. (How to give intramuscular antibiotics is described in Chapter 4.) Young infants in this classification get two antibiotics: intramuscular gentamicin and ampicillin because they are often infected with a broad range of bacteria and the combination of gentamicin and ampicillin is effective against this broad range of bacteria.
2. Treat the young infant to prevent low blood sugar as shown in the box on **page 8** of the Chart Booklet.
3. Teach the mother how to keep the infant warm on the way to the hospital (**page 8** of the Chart Booklet). Keeping a sick young infant warm is very important.
4. If the infant has also SEVERE DEHYDRATION or SOME DEHYDRATION, give the mother some prepared ORS solution and ask her to give frequent sips of ORS on the way. Also advise the mother to continue breastfeeding.

While you are giving the pre-referral treatments, you will also explain to the mother the need for referral and try to resolve any problems, prepare a referral note, gather any necessary supplies for the trip, and finally review with her what to do on the way to the hospital.

3.2 REFER THE YOUNG INFANT

Explain to the caregivers that young infants are particularly vulnerable. When they are seriously ill, they need hospital care and need to receive it promptly. Many families have reasons NOT to take a young infant to hospital. If this is the case, you will have to address these reasons and explain that the infant's illness can best be treated at the hospital.

1. ***Explain to the mother/family the need for referral, and get her/their agreement to take the infant. If you suspect that she/they does not want to take the infant, find out why.***
   Possible reasons are:
   - She/they thinks that hospitals are places where people often die, and she fears that her infant will die there too.
   - She/they does not think that the hospital will help the infant.
   - She cannot leave home and tend to her infant during a hospital stay because:
     - there is no one to take care of her other children, or
     - she is needed for farming, or
     - she may lose a job.
   - She/they does not have money to pay for transportation, hospital bills, medicines, or food for herself during the hospital stay.

2. ***Calm the mother's fears and help her resolve any problems.*** For example:
   - If the mother fears that her infant will die at the hospital, reassure her that the hospital has physicians, supplies, and equipment that can help cure her infant.
   - Explain what will happen at the hospital and how that will help her infant.
   - If the mother needs help at home while she is at the hospital, ask questions and make suggestions about who could help. For example, ask whether her husband, sister or mother could help with the other children or with meals while she is away.
   - Discuss with the mother how she can travel to the hospital. Help arrange transportation if necessary.

You may not be able to help the mother solve her problems and be sure that she goes to the hospital. However, it is important to do everything you can to help.

3. ***Write a referral note for the mother to take with her to the hospital. Tell her to give it to the health worker there.*** Write:
   - the name and age of the infant
   - the reason for referral (symptoms and signs leading to severe classification),
   - treatment that you have given
   - comments (any other information that the health worker at the hospital needs to know in order to care for the infant, such as earlier treatment of the illness or description of the infant's problems)
   - the date and time of referral
   - your name and the name of your clinic.

There is an example referral note at the back of the Young Infant Chart Booklet (**page 29**).

4. ***Give the mother any supplies and instructions needed to care for her infant on the way to the hospital:***
   - If the infant has SOME DEHYDRATION or SEVERE DEHYDRATION and can drink, give the mother some ORS solution for the infant to sip frequently on the way.
   - Review and encourage the mother to follow your instructions on the way to the hospital:
     - Keep the young infant warm during the trip.
     - Continue breastfeeding.

However, sometimes there are sick young infants who do not have access to a hospital, either because of distance or some reason that the family refuses referral. In these cases, there is something further that the health worker can do, as described in the following section.

3.3 WHERE REFERRAL IS REFUSED OR NOT FEASIBLE, FURTHER CLASSIFY THE SICK YOUNG INFANT

The best possible treatment for an infant with a very severe illness is at a hospital. However, referral is not feasible in many cases because access to hospital is difficult. The family may not have money for medicine, transport, lodging and food in larger towns, and transportation might not be available. Parents may not be able to take an infant to a larger health centre or hospital, in spite of the health worker's efforts to explain the need for referral.

The reality is that very few newborns are seen at hospitals because of barriers to referral. In such cases, the health worker should do all that she can do to help the family care for the baby.

To help reduce deaths in severely ill newborns who cannot access treatment in hospital, the health worker can further classify the young infant to determine **what appropriate treatment** can be given in outpatient until referral is feasible. For this further classification, a special table is used to identify treatment; see Chart Booklet on **page 13**.

To further classify the sick young infant where referral is refused or not feasible, check for the signs in the left column of the table. When the infant has signs in more than one row, choose the most severe classification.

PLEASE OPEN YOUR CHART BOOKLET TO PAGE 13 AND READ THE BOX "WHERE REFERRAL IS REFUSED OR NOT FEASIBLE, FURTHER CLASSIFY THE SICK YOUNG INFANT WITH POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE"

CRITICAL ILLNESS

First check if the infant has any of the following signs of **CRITICAL ILLNESS**:

- Convulsions
- Unable to feed at all
- No movement on stimulation
- Weight less than 2 kg

Infants with any one (or more) of the signs listed in the top row of the table on **page 13** are classified as CRITICAL ILLNESS. They have signs that require inpatient care. They need to be referred to hospital urgently and should not be treated at outpatient level. These infants are at higher risk of dying and thus you should explain again to the mother that the infant is very sick and needs hospital care.

Give the infant the urgent pre-referral treatment. Discuss the obstacles or the mother's worries that prevent her from taking the young infant. Do whatever you can to facilitate referral of sick young infants with CRITICAL ILLNESS because these infants will need specialized care including parenteral antibiotics, oxygen, feeding through a nasal gastric tube, and round-the-clock monitoring.

If referral is still not feasible, give treatments as described in the right column of the Assess and Classify box on **page 13** of the Chart Booklet.

The follow-up box on **page 20** of the Chart Booklet titled, "Clinical Severe Infection where Referral was Refused or Not Feasible," describes how to care for the young infant at each contact for injection of antibiotics.

CLINICAL SEVERE INFECTION

If the young infant does not have any of the signs of critical illness, determine if the young infant has any one of the following signs of **CLINICAL SEVERE INFECTION**:

- Not feeding well on observation
- Temperature 38°C or more
- Temperature less than 35.5°C
- Severe chest indrawing
- Movement only when stimulated

Infants with any one (or more) of these signs are classified as CLINICAL SEVERE INFECTION. These infants also need referral. However, when treatment in hospital is refused or not feasible, they could be treated with intramuscular gentamicin injections given at the outpatient clinic and oral amoxicillin given at home.

They can be treated with either of the following options:

Option 1: Give oral amoxicillin for 7 days and gentamicin injection for 7 days
Option 2: Give oral amoxicillin for 7 days and gentamicin injection for 2 days only

The option used in your country will be decided in the process of adapting the clinical guidelines for management of the sick young infant. Follow the recommendations of your country.

Give other treatments as described in the right column of the Assess and Classify box on **page 13** of the Chart Booklet.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 14 AND READ THE BOX "IF REFERRAL IS REFUSED OR NOT FEASIBLE, TREAT THE SICK YOUNG INFANT"

Follow up of these young infants is extremely important. If an infant becomes worse or does not improve, the young infant should be urgently referred to hospital. The health worker who gives the daily gentamicin injection should reassess the baby at each contact. After the gentamicin injections are completed, the mother should bring the young infant back for follow up to ensure that the improvement continues and the infant develops no new problems.

The follow-up box on **page 20** of the Chart Booklet titled, "Clinical Severe Infection when Referral was Refused or Not Feasible," describes how to care for the young infant at the follow-up visit.

3.3.3 SEVERE PNEUMONIA

If an infant's only sign of very severe disease is

- Fast breathing (60 breaths per minute or more, counted twice) in infants **less than 7 days old**,

the infant is classified as having **SEVERE PNEUMONIA**.

These infants should be referred to hospital. However, when referral is refused or not feasible, they could be treated at outpatient clinic with oral amoxicillin. Use the amoxicillin dosage chart on **page 14**.

Remember that infants **7 to 59 days old** whose only sign was fast breathing (60 breaths per minute or more, counted twice) were classified as PNEUMONIA and are treated with oral amoxicillin; they are not referred initially, but are followed up in 3 days and then referred if they are not improving or are worse.

Give other treatments as described in the right column of the Assess and Classify box on **page 13** of the Chart Booklet.

4. TREAT THE SICK YOUNG INFANT AND COUNSEL THE MOTHER

Based on the young infant's classifications, you have identified the treatments and counselling needed.

How to give the different treatments and how to counsel the mother are in the Chart Booklet.

4.1 GIVE INTRAMUSCULAR INJECTIONS OF ANTIBIOTICS

There are three situations when you will give a young infant antibiotics intramuscularly:

- ➜ For a young infant classified as POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, give the first dose of gentamicin and ampicillin intramuscularly prior to urgent referral.
- ➜ Where referral is refused or not feasible, and the young infant is classified as CRITICAL ILLNESS after further assessment, and referral is still not feasible, give a daily injection of gentamicin. In addition, give an injection of ampicillin twice each day.
- ➜ Where referral is refused or not feasible, and the young infant is classified as CLINICAL SEVERE INFECTION after further assessment, give a daily gentamicin injection. In addition, the mother will give oral amoxicillin tablets to the young infant twice each day.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 8 AND READ *GIVE FIRST DOSE OF GENTAMICIN AND AMPICILLIN INTRAMUSCULARLY.*

THEN TURN TO PAGE 14 AND READ *GIVE IM GENTAMICIN AND AMPICILLIN TO SICK YOUNG INFANT WHERE REFERRAL IS REFUSED OR NOT FEASIBLE.*

4.1.1 PREPARE GENTAMICIN FOR INTRAMUSCULAR INJECTION

- Wash your hands thoroughly and put on gloves.
- Gather a vial or ampoule of gentamicin, sterile needle, syringe, alcohol/antiseptic swabs and injection safety box.
- Injectable gentamicin is available in liquid form in 2 ml ampoules or vials in several strengths of 10mg/ml, 20 mg/ml or 40 mg/ml. Check the concentration. Most commonly available preparation is 40mg/ml. Check that the gentamicin has not expired.

- Use a small 2 ml or 3 ml syringe with 0.1 ml markings to accurately measure the dose. The needle should be 23 G or 24 G of up to 2.5 cm long.
- Refer to your Chart Booklet (**page 8 or 14**) to determine the dose appropriate for the young infant's weight.
- Draw up the medicine into the syringe.
- If you use a vial: Draw up air into the syringe equal to the dose you need. Then inject the air into the vial. Turn it upside down keeping the tip of needle in the fluid. If you draw bubbles push the plunger back and forward to return them into the vial. Tap the syringe to let any remaining bubbles rise to the top and gently push the plunger to clear them.
- If you use an ampoule: Wrap the neck in gauze to protect your fingers and snap off the top. Put the needle into the opening and draw the dose.
- Check that you have the correct dose.
- Cup the needle to avoid a finger prick.

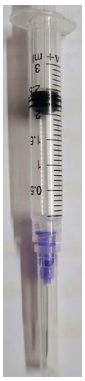
Give ONLY ONE injection of gentamicin daily and give the injection in the right or left thigh alternately from day to day.

4.1.2 PREPARE AMPICILLIN FOR INTRAMUSCULAR INJECTION

- The procedure of preparing ampicillin for intramuscular injection is similar to that described above for gentamicin except that ampicillin is available as powder in vials and needs adding sterile water. Follow the directions on the vial to prepare the medicine.
- Refer to your Chart Booklet (**page 8 or 14**) to determine the dose appropriate for the young infant's weight.
- Draw up 1.3 millilitres of sterile water and add it to the 250 milligram vial of ampicillin. Shake vial to mix the powder and water until it's completely dissolved.

Various disposable syringes with markings:

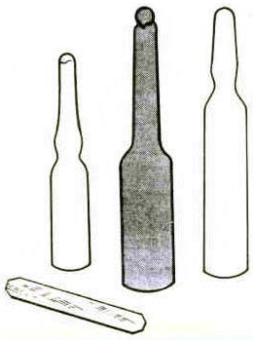
5 ml syringe with 0.2 ml markings



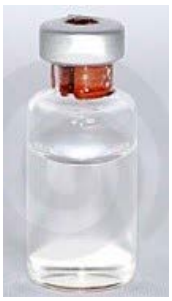
3 ml syringe with 0.1 ml markings

1 ml syringe with 0.01 ml markings

Ampoule and vial

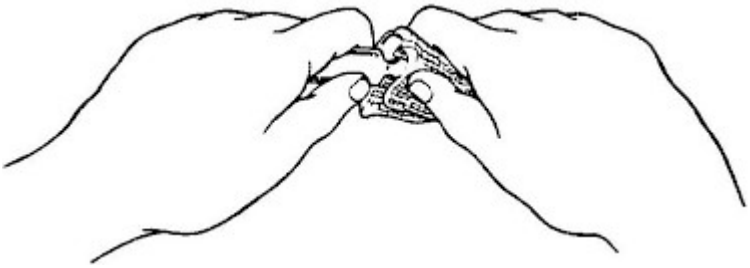


Ampoules are very small bottles of medicine with thin pointed glass tops that you break off.



Vials are very small bottles of medicine with sealed rubber tops.

Breaking an ampoule



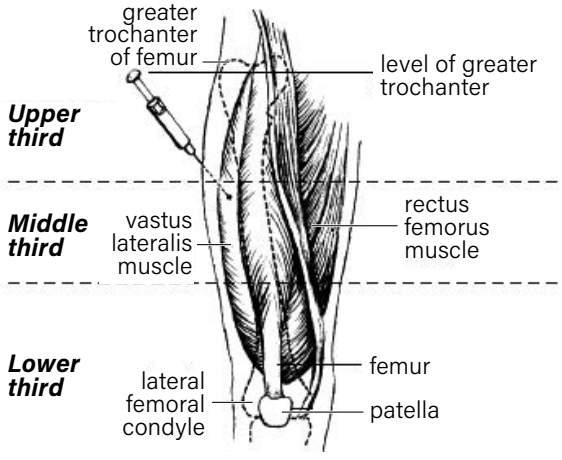
Intramuscular injection site in anterolateral thigh of infant

IM injection site (shaded area)

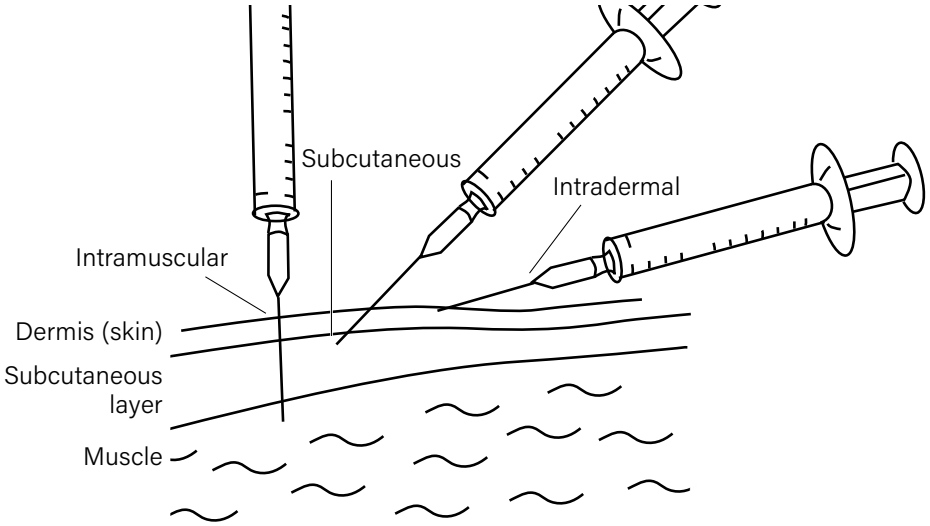
4.1.3 GIVE AN INTRAMUSCULAR INJECTION

- Explain to the mother/family the necessity of giving the injection to the infant. Show her you will give it in the upper outer thigh.
- Show the mother how to hold the infant gently but very firmly, as the child will probably start wriggling as the injection is given. If the child moves there is a danger of injury from the needle. The mother should take the infant on her lap. Her arm goes across the infant's upper body holding his arms and her hand holds the infant's legs.
- Locate the proper injection site in the upper outer thigh.
- Clean the injection site with cotton and isopropyl alcohol. Clean from top to bottom. Always wipe skin in one direction. Dispose of cotton in the appropriate bin.
- Take the syringe with needle attached and filled with antibiotic in the right hand.
- Confirm that the volume in the syringe corresponds to the correct dose for this infant.
- Stretch out (make taut, or tight) the skin and muscle at the injection site between the thumb and first finger of the left hand.
- Hold the syringe like a pencil. When ready to inject, insert the needle into the skin **at a 90-degree angle** with a quick thrust, going deep enough to enter the muscle tissue. Do not insert the whole needle. Do not touch the bone with the tip of the needle.
- Draw back the plunger slightly to make sure there is no blood (if there is, withdraw the needle slightly and try to draw back the plunger slightly again. This may not be necessary since you are injecting at the frontal part of the thigh where there are no big vessels or nerves).
- Give antibiotic drug by pushing the plunger slowly until the complete solution has been ejected.
- Leave the needle in place for a few seconds after completing to inject the solution.
- Remove the needle quickly in one stroke and press firmly over the injection site with a dry cotton wool.
- Hold the cotton wool in place for 1 to 2 minutes to prevent bleeding.
- Do not rub the area after giving the injection.
- Dispose of the used syringe and needle using a safety box.

Correct location of intramuscular injection in the upper-third of the thigh (this is a view of the infant's leg directly from the front)



Visual comparison of intramuscular, subcutaneous, and intradermal injections



4.1.4 CONSIDER THE POTENTIAL COMPLICATIONS OF INTRAMUSCULAR INJECTION

- **Discomfort or tenderness:** Some infants will experience pain, redness or swelling at the injection site. This will resolve spontaneously.
- **Cellulitis:** an infection at the site of injection is unlikely, but may become apparent if a well-demarcated zone of redness surrounds the infection site, and is noted to be expanding. The size is usually warm and tender. This should prompt referral for medical evaluation, and will require treatment with antibiotics.
- **Abscess:** A collection of pus may very rarely develop at the site of intramuscular injection. This infection may happen if an unsterile needle or syringe was used. This requires referral to a facility, and may require surgical drainage and/or antibiotic therapy.
- **Peripheral nerve injury**: If a mother expresses concern that the infant stopped moving a leg after an intramuscular injection, consider the possibility of a peripheral nerve injury. The infant should be referred for medical assessment.

Injection: Possible mistakes and consequent dangers

POSSIBLE MISTAKES	CONSEQUENT DANGERS
Incorrect procedures regarding cleaning and disinfection, or re-using a syringe and/or needle	Infection; swelling at the injection site, pus Tetanus Hepatitis B and, HIV C
Incorrect dose	Medicine not effective if dose is inadequate Medicine is dangerous if excessive dose given
Injection at wrong place	Bleeding Paralysis
Leg moving during injection	Needle could get stuck in leg causing injury
Not explaining or educating the parents about the injection(s).	Blame in case of injury or death Gossip
Not following up for any possible	Complication worsens without any corrective action Blame

NEVER RE-USE A SYRINGE OR NEEDLE!!

EXERCISE F

PART 1 – VIDEO

You will watch how to prepare and draw up ampicillin and gentamicin for injection and how to give an intramuscular injection to a young infant.

PART 2 – PRACTICE

You will practice handling syringes, needles and vials of gentamicin. You will determine and then draw up the correct dose of gentamicin for a sick young infant. You will locate the correct injection site on a young infant. Lastly you will give the injection to an orange or other fruit.

Listen carefully and follow your facilitator's instructions.

4.2 GIVE AN APPROPRIATE ORAL ANTIBIOTIC

Refer to the box in the Chart Booklet on **page 9** for the recommended antibiotic. Teaching a mother how to give the oral medicine at home is an essential part of giving an oral medication to a young infant. Teaching her should include the steps below, also listed on **page 9** of the Chart Booklet.

Follow the steps below to teach a mother how to give an oral antibiotic at home.

➜ **Determine the appropriate oral medicine for the young infant and the dosage for the infant's weight**

Oral amoxicillin is given to young infants who:

- Have LOCAL BACTERIAL INFECTION, or
- Have PNEUMONIA (fast breathing alone) in infant 7–59 days old

When referral is refused or not feasible, oral amoxicillin (and intramuscular gentamicin) is also given to young infants who:

- Have CLINICAL SEVERE INFECTION, or
- Have SEVERE PNEUMONIA (fast breathing alone) in infant less than 7 days old.

Determine the correct dose of oral amoxicillin from the table on **page 9 or 14**. Choose the dose according to the young infant's weight and the formulation of amoxicillin available.

➜ **Tell the mother the reason for giving the medicine to the infant, including:**

- why you are giving the oral medicine to her infant, and
- what problem it is treating.

➜ **Demonstrate how to measure a dose.**

Collect a container of the medicine and check its expiry date. Do not use expired medicines.

If you will give the mother dispersible amoxicillin tablets, determine the strength of the tablets (250 mg or 125 mg) and determine the dose according to the weight of the young infant. Show the mother how to measure the correct dose (e.g. 1/2 tablet, 1 tablet).

If you will give her amoxicillin syrup, determine the correct dose for the young infant's weight. Then show the mother how to measure the correct number of millilitres (ml) of amoxicillin syrup for one dose at home. Use a spoon like a spoon that the mother will have at home to measure the correct dose.

Remind the mother that she should wash her hands before opening and measuring the medicine.

➜ **Observe the mother practice measuring a dose by herself.**

Ask the mother to measure a dose by herself. Observe her as she practices. Tell her what she has done correctly. If she measured the dose incorrectly, show her again how to measure it.

If using a dispersible tablet, she should place the tablet in a spoon. Show her how to add a bit of breastmilk to the spoon and watch as the tablet dissolves.

➜ **Ask the mother to give the first dose to her infant.**

Watch as she measures and gives the syrup or dissolved tablet.

Tell the mother to watch the infant for 30 minutes after giving the dose. If the infant vomits within the 30 minutes (the syrup may be seen in the vomit), give another dose.

➜ **Explain carefully how to give the medicine. Label and package the medicine.**

Tell the mother how many times per day to give the dose. Tell her when to give it (such as early morning, lunch, dinner, before going to bed) and for how many days.

➜ **Explain that all the tablets or syrup must be used to complete the course of treatment, even if the infant gets better.**

Explain to the mother that even if the infant seems better, she should continue to treat the infant. This is important because the bacteria may still be present even though the signs of disease are gone.

Advise the mother to keep all medicines out of the reach of children. Also tell her to store medicines in a dry and dark place that is free of mice and insects.

➜ **Check the mother's understanding before she leaves the clinic.**

Ask the mother checking questions, such as:

"How much will you give each time?"

"When will you give it?" "For how many days?" "How will you measure the dose?"

If you feel that the mother is likely to have problems when she gives her infant the medicine(s) at home, offer more **information**, **examples** and **practice**. An infant needs to be treated correctly to get better.

4.3 TEACH THE MOTHER HOW TO TREAT LOCAL INFECTIONS AT HOME

There are three types of local infection in a young infant that a mother can treat at home: an umbilicus which is red or draining pus, skin pustules, or thrush. Twice each day for an infected umbilicus or skin pustules and four times each day for thrush, the mother cleans the infected area and then applies gentian violet. Half-strength gentian violet must be used in the mouth.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 10 AND READ THE BOX "TEACH THE MOTHER HOW TO TREAT LOCAL INFECTIONS AT HOME"

Explain and demonstrate the treatment to the mother. Then watch her and guide her as needed while she gives the treatment to her infant. Ask her to return for follow-up in 2 days, or sooner if the infection worsens. Explain that she should stop using gentian violet after 5 days (for umbilical or skin infection) or 7 days (for thrush). Ask her checking questions to be sure that she knows how many times a day to give the treatment and when to return.

If the mother will treat skin pustules or umbilical infection, give her a bottle of full strength (0.5%) gentian violet.

If the mother will treat thrush, give her a bottle of half-strength (0.25%) gentian violet.

4.4 MANAGE JAUNDICE

Young infants with JAUNDICE need home care just like those without any problem. They do not need any medication. However, the mother needs to be counselled to return immediately if palms and soles appear to be yellow. Also, you should follow up infants with jaundice the next day to assess if jaundice is worsening. If the young infant is older than 3 weeks (21 days), refer to hospital for assessment.

4.5 TREAT DIARRHOEA

4.5.1 PLAN A: TREAT DIARRHOEA AT HOME

This section describes Plan A, treatment of a young infant who has diarrhoea with NO DEHYDRATION. Young infants with SOME or SEVERE DEHYDRATION need to be rehydrated. You will learn how to do this the next sections. Eventually, all infants with diarrhoea will be treated on Plan A.

Explain the three rules of home treatment to the mother. These rules are:

- RULE 1: Give extra fluid (as much as the child will take)
- RULE 2: Continue exclusive breastfeeding
- RULE 3: Know when to return

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 11 of CHART BOOKLET AND READ THE BOX "PLAN A: TREAT DIARRHOEA AT HOME"

➜ RULE 1: GIVE EXTRA FLUID AND RULE 2: CONTINUE EXCLUSIVE BREASTFEEDING

All infants and children who have diarrhoea need extra fluid and continued feeding to prevent dehydration and give nourishment. The best way to give a young infant extra fluid and continue feeding is to breastfeed more often and for longer at each breastfeed. Additional fluids that may be given to a young infant are ORS solution and clean water. If an infant is exclusively breastfed, it is important **not** to introduce a food-based fluid.

There are two situations in which the mother should give ORS solution at home:

- The child has been treated for SOME DEHYDRATION or SEVERE DEHYDRATION during this visit. In other words, the child has just been rehydrated. For this child, drinking ORS solution will help keep the dehydration from coming back.
- The child cannot return to a clinic if the diarrhoea gets worse. For example, the family lives far away or the mother has a job that she cannot leave.

If a young infant will be given ORS solution at home, show the mother how much ORS to give the infant after each loose stool. For a young infant this would be 50 – 100 ml. She should first offer a breastfeed, and then give the ORS solution. Remind the mother to stop giving ORS solution after the diarrhoea has stopped.

When you give the mother ORS, show her how to mix the ORS solution and how to give it to her child. Ask the mother to practise mixing the ORS solution herself while you observe her.

Steps for making ORS solution:

- Wash your hands with soap and water.
- Pour all the powder from one packet into a clean container. Use any available container, such as a jar, bowl or bottle.
- Measure 1 litre of clean water (or correct amount for packet used). It is best to boil and cool the water. But if this is not possible, use the cleanest drinking water available.
- Pour the water into the container. Mix well until the powder is completely dissolved.
- Taste the solution so you know how it tastes.

Explain to the mother that she should mix fresh ORS solution each day in a clean container, keep the container covered, and throw away any solution remaining from the day before.

Explain to the mother that the diarrhoea should stop soon. ORS solution will not stop diarrhoea. The benefit of ORS solution is that it replaces the fluid and salts that the child loses in the diarrhoea and prevents the child from getting sicker. Tell the mother to:

- Give frequent small sips from a cup or spoon. Use a spoon to give fluid to a young child.
- If the child vomits, wait 10 minutes before giving more fluid. Then resume giving the fluid, but more slowly.
- Continue giving extra fluid until the diarrhoea stops.

➜ RULE 3: KNOW WHEN TO RETURN

Teach the mother the signs to bring a young infant back immediately. These signs are in the box entitled Advise the Mother to Give Home Care for the Young Infant" on **page 19** of the Chart Booklet.

4.5.2 PLAN B: TREAT SOME DEHYDRATION WITH ORS

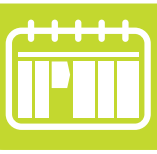
This section describes Plan B, treatment of a young infant who has diarrhoea with SOME DEHYDRATION. Plan B includes an initial treatment period of 4 hours in the clinic. During the 4 hours, the mother slowly gives a recommended amount of ORS solution. The mother gives it by spoonfuls or sips. It is helpful to have an ORT corner in your clinic.

A young infant who has a severe classification and SOME DEHYDRATION needs urgent referral to hospital. Do **not** try to rehydrate the young infant before he leaves. Quickly give the mother some ORS solution. Show her how to give frequent sips of it to the infant on the way to the hospital.

Otherwise, if a young infant who has SOME DEHYDRATION needs treatment for other non-severe problems, you should start treating the dehydration first. Then provide the other treatments.

After 4 hours, reassess and classify the young infant for dehydration using the chart on **page 3** of the Chart Booklet. If the signs of dehydration are gone, the infant is put on Plan A. If there is still some dehydration, the infant repeats Plan B. If the infant now has SEVERE DEHYDRATION, you will need to treat the child quickly in the clinic (Plan C).

Now study Plan B.



PLEASE OPEN YOUR CHART BOOKLET ON PAGE 11 AND READ THE BOX "PLAN B: TREAT SOME DEHYDRATION WITH ORS"

➜ DETERMINE AMOUNT OF ORS TO GIVE DURING FIRST 4 HOURS.

Use the chart in Plan B to determine how much ORS to give. An infant up to 4 month of age (weighing less than 6 kg) needs 200 – 450 ml of ORS. This amount is to be used as a guide. The weight of the infant, the degree of dehydration and the number of stools passed during rehydration will all affect the amount of ORS solution needed. The infant will usually want to drink as much as he needs. If the infant wants more or less than the estimated amount, give him what he wants.

Another way to estimate the amount of ORS solution needed (in ml) is described below.

Multiply the infant's weight (in kilograms) by 75. For example, an infant weighing 3.5 kg would need:

3.5 kg × 75 ml = 260 ml of ORS solution in 4 hours

Notice that this amount fits in the range given in the box. The box will save you this calculation.

Giving ORS solution should not interfere with a breastfed baby's normal feeding. The mother should pause to let the baby breastfeed whenever the baby wants to, and then resume the ORS solution

Note: Additional water previously recommended for infants under 6 months who are not breastfed to prevent hypernatraemia is no longer needed as low osmolarity ORS recommended by the WHO since 2005 is used.

➜ SHOW THE MOTHER HOW TO GIVE ORS SOLUTION.

Find a comfortable place in the clinic for the mother to sit with her young infant. Tell her how much ORS solution to give over the next 4 hours. Show her the amount in units that are used in your area. Show her how to give a spoonful frequently. Sit with her while she gives the infant the first few sips from a cup or spoon. Ask her if she has any questions.

If the infant vomits, the mother should wait about 10 minutes before giving more ORS solution. She should then give it more slowly.

Encourage the mother to pause to breastfeed whenever the infant wants to. When the infant finishes breastfeeding, resume giving the ORS solution again.

Show the mother where she can change the infant's nappy. Show her where to wash her hands afterwards.

Check with the mother from time to time to see if she has problems. If the young infant is not drinking the ORS solution well, try another method of giving the solution. You may try using a dropper or a syringe without the needle.

While the mother gives ORS solution at the clinic during the 4 hours, there is plenty of time to teach her how to care for her young infant. However, the first concern is to rehydrate the infant. When the infant is obviously improving, the mother can turn her attention to learning. Teach her about mixing and giving ORS solution and about Plan A. It is a good idea to have printed information that the mother can study while she is sitting with her infant. The information can also be reinforced by posters on the wall.

If the infant has improved and has NO DEHYDRATION, choose Plan A. Teach the mother Plan A if you have not already taught her during the past 4 hours. Before the mother leaves the clinic, ask good checking questions. Help the mother solve any problems she may have giving the infant extra fluid at home.

Note: If the infant's eyes are puffy, it is a sign of overhydration. It is not a danger sign or a sign of hypernatraemia. It is simply a sign that the infant has been rehydrated and does not need any more ORS solution at this time. The infant should be given only breastmilk. The mother should give ORS solution according to Plan A when the puffiness is gone.

☐ AFTER 4 HOURS:

After 4 hours of treatment on Plan B, reassess the infant using the ASSESS AND CLASSIFY chart. Classify the dehydration. Choose the appropriate plan to continue treatment.

Note: Reassess the infant before 4 hours if the infant is not taking the ORS solution or seems to be getting worse.

If the child has improved and has NO DEHYDRATION, chose Plan A: Treat diarrhoea at home.

If the young infant still has SOME DEHYDRATION, choose Plan B again. The young infant should continue to breastfeed frequently. If the clinic is closing before you finish the treatment, tell the mother to continue treatment at home.

If the infant is worse and now has SEVERE DEHYDRATION, you will need to treat the child quickly in the clinic (Plan C).

➜ IF THE MOTHER MUST LEAVE BEFORE COMPLETING TREATMENT:

Sometimes a mother must leave the clinic while her infant is still on Plan B, that is, before the infant is rehydrated. In such situations, you will need to:

- Show the mother how to prepare ORS solution at home. Have her practice this before she leaves.
- Show her how much ORS solution to give to complete the 4-hour treatment at home.
- Give her enough packets to complete rehydration. Also give her 2 more packets as recommended in Plan A.
- Explain the 3 Rules of Home Treatment (See Plan A):

4.5.3 PLAN C: TREAT SEVERE DEHYDRATION QUICKLY

Severely dehydrated young infants need to have water and salts quickly replaced. Intravenous (IV) fluids are usually used for this purpose. Rehydration therapy using IV fluids or using a nasogastric (NG) tube is recommended only for infants and children who have severe dehydration. The treatment of the severely dehydrated young infant depends on:

- the type of equipment available at your clinic or at a nearby clinic or hospital,
- the training you have received,
- whether the child can drink.

To determine how to treat a child who needs Plan C, refer to the flowchart on **page 12** of the Chart Booklet.

4.6 MANAGE HIV INFECTED OR EXPOSED YOUNG INFANT

Cotrimoxazole prophylaxis

Cotrimoxazole prophylaxis, in children with confirmed or possible HIV infection, will decrease sickness and death due to pneumonia caused by pneumocystis (jirovecii previously carinii) – commonly called PCP – and other common bacterial infections and malaria.

Give once daily cotrimoxazole prophylaxis to all young infants classified as HIV EXPOSED or CONFIRMED HIV INFECTION from 4–6 weeks of age. Determine the correct dose of cotrimoxazole according to the formulation available from the table on **page 9** of the Chart Booklet.

Note: Do NOT give cotrimoxazole to infants less than 1 month of age and premature or jaundiced.

Stop cotrimoxazole prophylaxis:

- In an infant classified as HIV EXPOSED when HIV infection has been definitively ruled out (negative virological test) AND the mother is no longer breastfeeding.
- In case of severe toxicity such as Stevens Johnson syndrome or severe pallor. This infant should be referred to second level for assessment.

Antiretroviral treatment and prophylaxis

Antiretroviral treatment (ART) and HIV care are needed for young infants classified as CONFIRMED HIV INFECTION. For ART to be effective it is important that a combination of three drugs is used, rather than using one or two drugs. Preferred and alternative ART regimens are described in the TREAT THE HIV INFECTED CHILD section of the standard IMCI Chart Booklet.

Antiretroviral (ARV) prophylaxis is needed for young infants classified as HIV EXPOSED: POSSIBLE HIV INFECTION. Every HIV-exposed young infant should get ARV prophylaxis (nevirapine or zidovudine) from birth to minimize the risk of mother-to-child HIV transmission.

The HIV positive mother should also get ARV drugs for treatment and to prevent HIV transmission to her child.

Mothers need to be prepared with counselling and support so that they adhere to the cotrimoxazole and ARV prophylaxis or treatment of the infant and their own treatment continuously. If you have been trained how to counsel the mothers, give ARV prophylaxis, ART and HIV care, follow your national guidelines. If you have not been trained, refer the young infant and his mother.

4.7 IMMUNIZE EVERY SICK YOUNG INFANT, AS NEEDED

Administer any immunizations that the young infant needs today if the infant is not going to be referred. Tell the mother when to bring the infant for the next immunizations.

Your facilitator will show you a video on preparing and giving oral amoxacillin and lead a drill to give you practice reading the gentamicin, ampicillin, and amoxicillin dosage table to determine the correct dose for infants based on weight.

EXERCISE G

In this exercise you will identify all the treatments needed, and specify the appropriate antibiotics and doses for infants. Refer to the *YOUNG INFANT* charts as needed.

PART 1:

Review the seven cases used in Exercises B and E. For each case:

1. Review the infant's assessment results and classifications that you have written, to remind you of the infant's condition. Note that some of the young infants move only when stimulated and one does not suckle at all.
2. Determine whether or not the young infant should be urgently referred. If so, write only the urgent treatments needed on the back of the recording form. If the infant does not need urgent referral, write all recommended treatments and advice to the mother.
3. If the infant needs an antibiotic, also write the name of the antibiotic that should be given and the dose and schedule.

PART 2:

Read the additional information below. Then further assess and classify the young infant. Based on the further assessment, list the actions to take, including any treatments, dosages and schedule for antibiotics, and advice to give to the mother.

Case 7: NEERA

When the health worker explains to the mother that Neera is very sick and needs to be taken to the hospital urgently, her mother explains that it is just not possible for her to take Neera to the hospital which is 4 hours away. She has left 4 small children at home alone and her husband is gone to work for the week in another town. They have just recently moved to the village and she does not know many people there. She has no money for the transportation or medicines or food. There is no one to help with the children and no way to get any money quickly. She also is certain that her husband will be very angry with her if she leaves the house and the children overnight. She is extremely distressed but says that she just cannot take Neera to the hospital.

The health worker reassesses Neera using the table on **page 13** of the Chart Booklet, "Where Referral is Refused or not Feasible, Further Assess and Classify the Young Infant with Possible Serious Bacterial Infection or Very Severe Disease."

On observation, Neera is not feeding well, but she is feeding. She is awake and cries weakly.

The health worker recalls that Neera did not have fever or low temperature, chest indrawing, or fast breathing.

1. **What is Neera's further classification?**
2. **Can she be treated as an outpatient?**
3. **List below all the treatments to give Neera including the dosage and schedule of any medicines and advice to give to the mother.**

When you have completed this exercise, please discuss your answers with a facilitator.

4.8 TEACH CORRECT POSITIONING AND ATTACHMENT FOR BREASTFEEDING

Reasons for Poor Attachment and Ineffective Suckling

There are several reasons that an infant may be poorly attached or not able to suckle effectively. He may have had bottle feeds, especially in the first few days after delivery. His mother may be inexperienced. She may have had some difficulty and nobody to help or advise her. For example, perhaps the infant was small and weak, the mother's nipples were flat or there was a delay starting to breastfeed.

The infant may be poorly positioned at the breast. Positioning is important because poor positioning often results in poor attachment, especially in younger infants. If the infant is positioned well, the attachment is likely to be good.

Good positioning is recognized by the following signs:

- Infant's head and body in line
- Infant approaches breast with nose opposite to the nipple
- Infant held close to the mother's body, and
- Infant's whole body is supported.

Poor positioning is recognized by any of the following signs:

- Infant's neck is twisted or bent forward,
- Infant's body is turned away from mother,
- Infant's body is not close to mother, or
- Only the infant's head and neck are supported

Young infant's body close, facing breast

Young infant's body away from mother, neck twisted

Improving Positioning and Attachment

If in your assessment of breastfeeding you found any difficulty with attachment or suckling, help the mother position and attach her infant better. Make sure that the mother is comfortable and relaxed, for example, sitting on a low seat with her back straight. Then follow the steps in the box on **page 16**.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 16 AND READ THE BOX "TEACH CORRECT POSITIONING AND ATTACHMENT FOR BREASTFEEDING"

Always observe a mother breastfeeding before you help her, so that you understand her situation clearly. Do not rush to make her do something different. If you see that the mother needs help, first say something encouraging, like:

"She really wants your breastmilk, doesn't she?"

Then explain what might help and ask if she would like you to show her. For example, say something like,

"Breastfeeding might be more comfortable for you if your young infant took a larger mouthful of breast. Would you like me to show you how?"

If she agrees, you can start to help her.

Infant ready to attach. Nose is opposite nipple, mouth is open wide.

As you show the mother how to position and attach the infant, be careful not to take over from her. Explain and demonstrate what you want her to do. Then let the mother position and attach the infant herself.

Then look for signs of good attachment and effective suckling again. If the attachment or suckling is not good, ask the mother to remove the infant from her breast and to try again.

When the infant is suckling well, explain to the mother that it is important to breastfeed long enough at each feed. She should not stop the breastfeed before the infant wants to.

If the infant is **still** not suckling well, this infant should be referred urgently to hospital.

4.9 TEACH THE MOTHER HOW TO EXPRESS BREASTMILK

Expression of breastmilk is usually required for feeding infants who do not suck effectively but are able to swallow effectively (as in the case of low birth weight babies). Expressing milk is also useful to relieve engorgement, feed a sick young infant who cannot suckle enough, keep up the supply of breastmilk when a mother or young infant is ill or to leave breastmilk for a young infant when his mother goes out or to work. All health workers who care for breastfeeding mothers and young infants should be able to teach mothers how to express their milk.

Hand expression is the most useful way to express milk. It needs no appliance, so a woman can do it anywhere, at any time. It is easy to hand express when the breasts are soft. It is more difficult when the breasts are engorged and tender. So, teach a mother how to express her milk in the first or second day after delivery. Do not wait until the third day, when her breasts are full.

Many mothers are able to express plenty of breastmilk using different techniques. If a mother's technique works for her, let her continue to do it that way. But if a mother is having difficulty expressing enough milk, teach her a more effective technique.

For expressing breastmilk, choose a cup, glass or jug with a wide mouth. Ask the mother to wash the cup in soap and water. Pour boiling water into the cup, and leave it for a few minutes. Boiling water will kill most of the germs. When ready to express milk, pour the water out of the cup.

A woman should express her own breastmilk. The breasts are easily hurt if another person tries. If you are showing a woman how to express, show her on your own body as much as possible, while she copies you. If you prefer not to use your own body, use a model breast, or practise on the soft part of your arm or cheek. If you need to touch her to show her exactly where to press her breast, be very gentle.

A mother should start to express milk on the first day, within six hours of delivery if possible. She may only express a few drops of colostrum at first, but it helps breast-milk production to begin, in the same way that a young infant suckling soon after delivery helps breast-milk production to begin. She should express as much as she can as often as her young infant would breastfeed. This should be at least every 3 hours, including during the night. If she expresses only a few times, or if there are long intervals between expressions, she may not be able to produce enough milk.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 16 AND READ THE BOX "TEACH THE MOTHER HOW TO EXPRESS BREASTMILK"

4.10 TEACH THE MOTHER HOW TO FEED BY A CUP

If a young infant cannot breastfeed, he should be fed expressed breastmilk by a cup. If the mother cannot or has chosen not to breastfeed, the infant should be fed a breastmilk substitute by a cup. Cup feeding is safer than bottle feeding because:

- Cups are easy to clean with soap and water, if boiling is not possible.
- Cups are less likely than bottles to be carried around for a long time, giving bacteria time to breed
- A cup cannot be left beside a young infant, for the young infant to feed himself.
- The person who feeds a young infant by cup has to hold the young infant and look at him, and give him some of the contact that he needs.
- A cup does not interfere with suckling at the breast.
- A cup enables a young infant to control his own intake.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 17 AND READ THE BOX "TEACH THE MOTHER HOW TO FEED BY A CUP"

Cup feeding is usually better than feeding with a spoon and cup because spoon feeding takes longer than cup feeding and mothers often find it difficult, especially at night. You need three hands to spoon feed: to hold the young infant, the cup of milk and the spoon. Some mothers give up spoon feeding before the young infant has had enough. Some spoon fed babies do not gain weight well. However, spoon feeding is safe if a mother prefers it, and if she gives the young infant enough. Also, if a young infant is very ill, for example with difficult breathing, itis sometimes easier to feed him with a spoon for a short time.

If a mother is expressing more than her low birth weight young infant needs, let her express the second half of the milk from each breast into a different container. Let her offer the second half of the expressed breastmilk first. Her young infant gets more hindmilk, which helps him to get the extra energy that he needs. This helps a young infant to grow better.

4.11 COUNSEL THE MOTHER ABOUT OTHER FEEDING PROBLEMS

- If a mother is breastfeeding her infant **less than 8 times in 24 hours**, advise her to increase the frequency of breastfeeding. The mother should breastfeed as often and for as long as the infant wants, day and night.
- If the infant receives **other foods or drinks**, counsel the mother about breastfeeding more, reducing the amount of the other foods or drinks, and if possible, stopping altogether. Advise her to feed the infant any other drinks from a cup, and not from a feeding bottle.

- If the mother **does not breastfeed at all**, consider referring her for breastfeeding counselling and possible re-lactation. If the mother is interested, a breastfeeding counsellor may be able to help her to overcome difficulties and begin breastfeeding again.
- Counsel a mother who does not breastfeed about choosing and correctly preparing an appropriate breastmilk substitute.

Follow-up any young infant with a feeding problem in 2 days. This is especially important if you are recommending a significant change in the way the infant is fed.

4.12 COUNSEL THE HIV POSITIVE MOTHER AROUND FEEDING OPTIONS

Mother-to-child transmission of HIV is the primary mode of HIV infection in infants. Transmission can occur during pregnancy, birth, or through breastfeeding. The counselling of HIV-positive mother around feeding options will depend upon the child's HIV status and national or sub-national strategy.

National or sub-national health authorities should decide whether health services will principally counsel mothers known to be HIV-infected to either breastfeed and take antiretrovirals or avoid all breastfeeding. Decisions on whether or not HIV-infected mothers should breastfeed their infants is generally based on comparing the risk of infants acquiring HIV through breastfeeding, with the increased risk of death from malnutrition, diarrhoea and pneumonia if the infants are not exclusively breastfed.

Young infants, who have CONFIRMED HIV INFECTION, should be fed according to feeding recommendations for the general population – they should be exclusively breastfed for the first six months of life. There is no reason to avoid breastfeeding because the infant is already HIV-infected. Follow the Feeding Recommendations in your Chart Booklet. These infants should be started immediately on ART.

All HIV-infected women whose infants are classified as HIV EXPOSED should be informed on national recommendations for HIV and infant feeding that will most likely give infants the greatest chance to prevent HIV infection and to ensure the child survives. Inform the mother on the infant feeding practice recommended by your national or sub-national strategy.

If the mother mentions other feeding alternative than recommended, discuss with her the advantages and disadvantages associated with breastfeeding and replacement feeding as outlined in the table below.

PRACTICE	ADVANTAGES	DISADVANTAGES
EXCLUSIVE BREAST-FEEDING	**Advantages of breast milk** ✓ Is the perfect food for babies ✓ Protects babies from many serious diseases ✓ Gives babies all of the nutrition and water they need ✓ Is free, always available, and does not need any special preparation **Advantages of exclusive breastfeeding** ✓ Exclusive breastfeeding for the first few months **lowers the risk of passing HIV**, compared to mixed feeding ✓ **People will not ask why** the mother is breastfeeding ✓ Exclusive breastfeeding **protects the mother from getting pregnant** again too soon	**Disadvantages of exclusive breastfeeding** ✓ As long as a mother is breastfeeding, her **baby is exposed to HIV** ✓ **People may pressure** her to give water, other liquids, or food to the baby while she is breastfeeding. This practice, known as mixed feeding, increases the risk of HIV transmission, diarrhoea, and other infections ✓ The **mother will need support** to exclusively breastfeed until it is possible for the mother to use another feeding option ✓ It **may be difficult if the mother works outside** the home and cannot take the baby with her
COMMERCIAL INFANT FORMULA	**Advantages of formula** ✓ Giving only formula **carries no risk of transmitting HIV** to the baby ✓ Most of the **nutrients** a baby needs have already been added to the formula ✓ **Others can help feed** the baby	**Disadvantages of formula** ✓ **Formula does not contain antibodies**. These are substances that protect the baby from serious infections ✓ A formula-fed baby is **more likely to get seriously sick** from diarrhoea, chest infections and malnutrition ✓ To prepare formula there is a need for **sustainable supplies** of fuel and clean water (brought to a rolling boil). ✓ **People may wonder why** the mother is not breastfeeding. ✓ Formula **takes time to prepare** – bottle feeds should be made up fresh each time. ✓ Formula is **expensive.** ✓ The **mother will need support** to exclusively and safely formula feed. ✓ Need to **learn how to feed by cup.** ✓ The **mother may get pregnant again too soon**

Advantages and disadvantages of the main feeding options available to HIV-infected mothers

Replacement feeding should be given only when conditions for safe feeding are met. If they conditions are not met, breastfeeding may still provide infants born to HIV-infected mothers with a greater chance of HIV-free survival.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 17 AND READ THE BOX "HOW TO PREPARE COMMERCIAL FORMULA MILK" AND THE BOX "COUNSEL HIV POSITIVE MOTHER WHO IS NOT BREASTFEEDING"

EXERCISE H

PART 1 – VIDEO

You will watch a video demonstration of the steps to help a mother improve her young infant's positioning and attachment for breastfeeding. You will also watch a video demonstration of expression of breastmilk and feeding by a cup.

PART 2 – PHOTOGRAPHS

In this exercise you will study photographs to practice recognizing signs of good or poor positioning and attachment for breastfeeding. When everyone is ready, there will be a group discussion of each of the photographs. You will discuss what the health worker could do to help the mother improve the positioning and attachment for breastfeeding.

1. Study photographs numbered 24 through 26 of young infants at the breast. Look for each of the signs of good positioning. Compare your observations about each photograph with the answers in the chart below to help you learn what good or poor positioning looks like.
2. Now study photographs 27 through 29. In these photographs, look for each of the signs of good positioning and mark on the chart whether each is present. Also decide if the attachment is good.

PHOTO	SIGNS OF GOOD POSITIONING				COMMENTS ON ATTACHMENT
	Infant's head and body in line	Infant approaches breast with nose opposite the nipple	Infant held close to mother's body	Infant's whole body supported	
24	yes	yes	yes	yes	
25	yes	yes	yes	yes	
26	no – neck turned so not in line with body	no	no – turned away from mother's body	no	Not well attached: areola equal above top lip and below bottom lip, mouth not wide open, lower lip not turned out.
27					
28					
29					

Tell a facilitator when you have completed this exercise.
When everyone is ready, there will be a group discussion.

4.13 TEACH THE MOTHER HOW TO KEEP THE LOW WEIGHT INFANT WARM AT HOME

It is important to maintain the body temperature of the newborn between 36.5 and 37.4°C. Low temperature in the newborn has an adverse impact on the sick newborn and increases the risk of death. Low birth weight infants need greater attention to thermal care than those infants who do have not low birth weight.

Advise the mother to keep the young infant in her bed in a warm room (with the room temperature at least 25°C). Ask her to avoid bathing the low weight infant and to keep the infant dry at all times. Ask the mother to periodically feel the hands and feet of the infant to make sure that they are warm. Skin-to-skin contact is the best way to re-warm the infant if the hands and feet are cold, and to prevent the infant getting cold if the room is cool. Skin-to-skin contact can be provided by the mother or any adult. The adult body will transfer heat to the newborn.

PLEASE OPEN YOUR CHART BOOKLET ON PAGE 18 AND READ THE BOX "TEACH THE MOTHER HOW TO KEEP THE LOW WEIGHT INFANT WARM AT HOME"

For keeping the young infant in skin to skin contact, provide privacy to the mother and request her to sit or recline comfortably:

1. Ask her to undress the young infant gently, except for cap, nappy and socks.
2. Place the young infant prone on mother's chest in an upright and extended posture, between her breasts, in skin to skin contact.
3. Turn young infant's head to one side to keep airways clear.
4. Wrap the young infant-mother duo with a blanket or shawl to hold the infant in place.
5. Cover the young infant with mother's blouse or gown. Then cover the duo with a shawl or blanket as appropriate for the climate.
6. Ask the mother to breastfeed the young infant frequently.

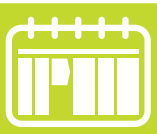
If skin to skin contact is not possible, dress and wrap the young infant ensuring that head, hands and feet are also well covered. Hold the young infant close to the caregiver's body, in a room warmed by a heating device. Ask the mother to breastfeed the young infant frequently.

EXERCISE 1

You will watch a video demonstration of how to help the mother to keep a low weight infant warm at home. You will also watch a video demonstration of how to express breastmilk, feed by a cup and treat thrush in a young infant.

4.14 ADVISE MOTHER TO GIVE HOME CARE FOR THE YOUNG INFANT

These are basic home care steps for ALL sick young infants. Teach each mother these steps.



PLEASE OPEN YOUR CHART BOOKLET ON PAGE 19 AND READ THE BOX "ADVISE THE MOTHER TON GIVING HOME CARE TO THE SICK YOUNG INFANT"

EXCLUSIVELY BREASTFEED THE YOUNG INFANT:

Frequent and exclusive breastfeeding will give the infant nourishment and help prevent dehydration and infections.

MAKE SURE THE YOUNG INFANT IS KEPT WARM AT ALL TIMES:

Keeping a young infant warm (but not too hot) is very important at all times, but especially when the infant is sick. Low temperature alone can kill young infants.

WHEN TO RETURN:

Tell the mother when to return for a ***follow-up visit***. Use the Follow Up Visit box to determine when the infant should be brought back, according to the infant's classifications.

Also teach the mother ***when to return immediately***. The signs mentioned in the box are particularly important signs to watch for. Teach the mother these 8 signs. Use the mother's card to explain the signs and help her to remember them. Ask her checking questions to be sure she knows when to return immediately.

4.15 COUNSEL THE MOTHER ABOUT HER OWN HEALTH

During a young infant visit, listen for any problems that the mother herself may be having. The mother may need treatment or referral for her own health problems.

EXERCISE J

In this exercise you will review the steps of some treatments for sick young infants.

Review the case in Exercise E: Case 2 – Sashie. Refer to the *YOUNG INFANT* charts as needed.

For this case:

➜ Review the infant's assessment findings, classifications, and treatments needed.
➜ Answer the additional questions below about treating each case.

Case 2: SASHIE

1. In addition to treatment with antibiotics, Sashie needs treatment at home for her local bacterial infection, that is, the pustules on her buttocks. List below the steps that her mother should take to treat the skin pustules at home.

   - _____
   - _____
   - _____
   - _____

2. How often should her mother treat the skin pustules?

   _____

3. For how many days? _____

4. Sashie also needs "home care for the young infant." What are the 3 main points to advise the mother about home care?

   - _____
   - _____
   - _____

5. What would you tell Sashie's mother about when to return?

   _____

   _____

   _____

When you have completed this exercise, please discuss your answers with a facilitator.

Your facilitator will lead a drill to review points of advice for mothers of young infants.

5. GIVE FOLLOW-UP CARE FOR THE SICK YOUNG INFANT

Follow-up visits are recommended for young infants who are classified as, PNEUMONIA or SEVERE PNEUMONIA, LOCAL BACTERIAL INFECTION, JAUNDICE, DIARRHOEA, FEEDING PROBLEM OR LOW WEIGHT. Instructions for carrying out follow-up visits for the sick young infant age up to 2 months are on **pages 20-24** of the Chart Booklet.

Extremely important is follow-up of infants having CRITICAL ILLNESS and CLINICAL SEVERE INFECTION where referral was refused or not feasible and are treated at home. They need close follow-up for signs of deterioration at each contact for treatment.

As with the sick child who comes for follow-up, a sick young infant is assessed differently at a follow-up visit than at an initial visit. Once you know that the young infant has been brought to the clinic for follow-up, ask whether there are any **new** problems. **Also, assess every young infant for signs of POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, PNEUMONIA, and LOCAL BACTERIAL INFECTION**. An infant who has a new problem should receive a full assessment as if it were an initial visit.

If the infant does not have POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE or a new problem, use the box that matches the infant's previous classification in the section GIVE FOLLOW-UP CARE FOR THE YOUNG INFANT on pages 20-24 of the Chart Booklet.

The instructions in the follow-up box (for the previous classification) tell how to assess the young infant. These instructions also tell the appropriate follow-up treatment to give. Do not use the classification tables for the young infant to classify the signs or determine treatment.

5.1 CRITICAL ILLNESS WHERE REFERRAL WAS REFUSED OR NOT FEASIBLE

When a young infant classified as having CRITICAL ILLNESS returns for each injection of antibiotics, follow the instructions in the "Critical illness" box of the follow-up section of the chart. This infant needs inpatient care and should not be treated at outpatient level. Explain again to the caregiver that the infant is very sick and needs urgent referral for hospital care.

➜ Reassess the young infant as on **page 13** of the Chart Booklet
➜ Treat any new problem

If referral is still not feasible, continue giving once daily IM gentamicin (depending on the national recommendations for 2 or 7 days) and twice-daily IM ampicillin until referral is feasible or for 7 days.

5.2 CLINICAL SEVERE INFECTION WHERE REFERRAL WAS REFUSED OR NOT FEASIBLE

Infants having CLINICAL SEVERE INFECTION who are treated at home need close follow-up for signs of deterioration. At each contact for gentamicin injection and, if a 2-day gentamicin regimen is used, in 3 days, that is on day 4 of treatment, assess the infant for signs of deterioration. See **page 20** of the Chart Booklet.

Refer the young infant urgently if:

- ➜ the infant becomes worse **or**
- ➜ any new sign of CLINICAL SEVERE INFECTION appears while on treatment **or**
- ➜ if no improvement in 3 days, or
- ➜ any sign of CLINICAL SEVERE INFECTION is still present at the contact for 7th injection of gentamicin

If the young infant is improving, complete the 2 days (or 7 days) treatment with IM gentamicin. Ask the mother to continue giving the amoxicillin twice daily until all the tablets are finished.

5.3 PNEUMONIA OR SEVERE PNEUMONIA

When a young infant classified as having PNEUMONIA or SEVERE PNEUMONIA returns for follow-up in 3 days, follow the instructions in the relevant box in the Chart Booklet on **page 21**. Reassess the young infant for Possible Serious Bacterial Infection or Very Severe Disease, Pneumonia, and Local Bacterial Infection as on **page 1**.

- ➜ Refer the young infant if:
  - – the infant becomes worse after treatment is started **or**
  - – any new sign of POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE appears while on treatment.
- ➜ If the young infant is improving, ask the mother to continue giving the oral amoxicillin twice daily until all the tablets are finished.
- ➜ Ask the mother to bring the young infant back in 4 more days.

Young infants with fast breathing alone should be checked as often as possible but it is mandatory to do so in 3 days, that is on day 4 of treatment after 3 full days of treatment have been completed.

5.4 LOCAL BACTERIAL INFECTION

When a young infant classified as having LOCAL BACTERIAL INFECTION returns for follow-up in 2 days, follow the instructions in the relevant box in the Chart Booklet on **page 21**.

To assess the young infant, look at the umbilicus or skin pustules. Then select the appropriate treatment.

➜ If umbilical **pus or redness remains same or is worse**, refer the infant to hospital. Also refer if the **skin pustules are the same or worse** than before.

➜ If umbilical **pus and redness are improved**, tell the mother to complete the 5 days of antibiotic that she was given during the initial visit. Improved means there is less pus and redness has reduced. Similarly, if skin pustules have improved, which means they are less in number and are drying up, tell the mother to continue giving the antibiotic. Emphasize that it is important to continue giving the antibiotic even when the infant is improving. She should also continue cleaning and applying gentian violet to the skin pustules or umbilicus for a total of 5 days.

5.5 JAUNDICE

When a young infant classified as having JAUNDICE returns for follow-up in 1 day, follow the instructions in the relevant box on **page 22**.

At follow up, assess if the infant has yellow palms or soles.

➜ If the infant has yellow palms or soles, classify as SEVERE JAUNDICE and refer urgently to hospital.

➜ If the young infant does not have yellow palms or soles but jaundice has not decreased compared to the initial visit, continue to follow up daily until jaundice starts decreasing.

➜ If jaundice has started decreasing, reassure the mother and ask her to continue home care. Ask her to return for another follow-up visit at 3 weeks of age.

➜ If a young infant continues to have jaundice beyond 3 weeks of age, refer to hospital for further assessment.

5.6 DIARRHOEA

If the young infant classified as having DIARRHOEA returns for follow-up in 2 days, follow the instructions in the box on **page 23**.

If the diarrhoea has stopped, tell the mother to continue exclusive breastfeeding

☐ If the diarrhoea has not stopped, reassess the young infant for diarrhoea as described in the assessment box, "Does the young infant have diarrhoea?" on **page 3** of the Chart Booklet and select treatment plan according to the classification.

5.7 FEEDING PROBLEM

When a young infant who had a feeding problem returns for follow-up in 2 days, follow the instructions in the relevant box on **page 23**.

Reassess feeding by asking questions in "Then Check for Feeding Problem or Low Weight" On **page 5 or 6** of the Chart Booklet. Assess breastfeeding if the infant is breastfed.

- ➜ Refer to the young infant's recording form or your notes for a description of the feeding problem found at the initial visit and previous recommendations. Ask the mother to describe how she has been carrying out these recommendations and ask about any problems she encountered in doing so.
- ➜ Counsel the mother about new or continuing feeding problems. Refer to the Feeding recommendations on **page 15**, recommendations in the Identify Treatment column on **page 5 or 6** of the Chart Booklet and boxes in the "Counsel the Mother " section as needed. If you counsel the mother to make significant changes in feeding, ask her to bring the young infant back again in 2 days.

  For example, you may have asked a mother to stop giving drinks of water or juice in a bottle, and to breastfeed more frequently and for longer. You will assess how many times she is now breastfeeding in 24 hours and whether she has stopped giving the bottle. Then advise and encourage her as needed.
- ➜ If the young infant is low weight for age, ask the mother to return 14 days after the initial visit. At that time, you will assess the young infant's weight again. Young infants are asked to return sooner to have their weight checked than older infants and young children. This is because they should grow faster and are at higher risk if they do not gain weight.
- ➜ If you do not think that feeding will improve, or if the young infant has lost weight, refer to hospital.

5.8 LOW WEIGHT FOR AGE

When a young infant who was classified as LOW WEIGHT FOR AGE returns for follow-up in 14 days (or in 7 days if the infant is receiving no breastmilk), follow the instructions in the relevant box on **page 24**.

Determine if the young infant is still low weight for age. Also reassess his feeding by asking the questions in the assessment box, "Then Check for Feeding Problem or Low Weight for Age." Assess breastfeeding if the young infant is breastfed.

- ➜ If the young infant is **no longer low weight for age**, praise the mother for feeding the infant well. Encourage her to continue feeding the infant as she has been or with any additional improvements you have suggested.
- ➜ If the young infant is **still low weight for age, but is feeding well**, praise the mother. Ask her to have her infant weighed again within a month or when she returns for immunization. You will want to check that the infant continues to feed well and continues gaining weight.

Many young infants who were low birthweight will still be low weight for age, but will be feeding and gaining weight well.

➜ If the young infant is **still low weight for age and still has a feeding problem**, counsel the mother about the problem. Ask the mother to return with her infant again in 14 days. Continue to see the young infant every few weeks until you are sure he is feeding well and gaining weight regularly or is no longer low weight for age.

➜ If you do not think that feeding will improve, or if the young infant has lost weight, refer to hospital.

5.9 THRUSH

When a young infant who had thrush returns for follow-up in 2 days, follow the instructions in the relevant box on **page 24**.

Check the thrush and reassess the infant's feeding.

➜ If the **thrush is worse** or the infant has **problems with attachment or suckling**, refer to hospital. It is very important that the infant be treated so that he can resume good feeding as soon as possible.

➜ If the **thrush is the same or better** and the infant is **feeding well**, continue the treatment with half-strength gentian violet. Stop using gentian violet after 5 more days.

CONCLUSION

This updated training manual has introduced the new WHO recommendations that describe effective simplified antibiotic treatment for some young infants who have possible serious bacterial infection or very severe disease but cannot go for care at hospital. Using a new scheme for further assessing and classifying these young infants where referral is refused or not feasible, health workers can determine whether a young infant can be treated as an outpatient or **must** be referred.

The combination of daily intramuscular injections of gentamicin given by a trained health worker[1], plus 7 days of oral amoxicillin given by the mother at home, can effectively treat most young infants who are classified on further assessment as Clinical Severe Infection.

Infants who are classified on further assessment as Severe Pneumonia can be treated with oral amoxicillin for 7 days at home.

Close follow-up of all sick young infants is essential, and particularly for those who receive simplified antibiotic treatment, in order to promptly identify any infant who does not improve on treatment. Then the young infant can be referred or assisted to go urgently to hospital for further treatment.

Although hospital management including other medicines and supportive care remains the best care for young infants with Possible Severe Bacterial Infection or Very Severe Disease, these simplified antibiotic treatment regimens give hope of saving a young infant's life in those circumstances where referral is refused by the family or otherwise is not feasible.

1 For 2 days or 7 days, depending on the treatment option recommended in your country.

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ISBN 978-92-4-151637-2