INTRODUCTION

In the previous module you learned to identify the treatment needed for sick children age 2 months up to 5 years. Sick children often begin treatment in a clinic and need to continue treatment at home. The chart *TREAT THE CHILD* describes the treatments.

In this module you will use the chart to learn ***how to give*** each treatment. You will also learn ***how to teach the mother*** to continue giving treatment at home.

LEARNING OBJECTIVES

This module will describe and allow you to practice the following skills:

* Determining appropriate oral drugs and dosages for a sick child
* Giving oral drugs (including antibiotics, antimalarials, paracetamol, vitamin A, iron, zinc and bronchodilator), and teaching the mother how and when to give oral drug at home
* Treating local infections (such as eye infections, ear drainage, mouth ulcers, sore throat and cough), and teaching the mother how and when to give the treatments at home
* Checking the mother's understanding
* Giving drugs administered in the clinic only (intramuscular injections of chloramphenicol and quinine and diazepam given rectally)
* Preventing low blood sugar
* Treating wheezing children by giving rapid acting bronchodilators and teaching mothers to give oral salbutamol at home.
* Treating different classifications of dehydration, and teaching the mother to give extra fluid at home
* Immunizing children

1.0 SELECT THE APPROPRIATE ORAL DRUG AND DETERMINE THE DOSE AND SCHEDULE

Use *TREAT THE CHILD* chart to select the appropriate drug, and to determine the dose and schedule. There are some points to remember about each oral drug.

1.1 GIVE AN APPROPRIATE ORAL ANTIBIOTIC

Children with the following classifications need an antibiotic.

- SEVERE PNEUMONIA OR VERY SEVERE DISEASE
- PNEUMONIA
- SEVERE DEHYDRATION with cholera in the area
- DYSENTERY
- VERY SEVERE FEBRILE DISEASE
- SEVERE COMPLICATED MEASLES
- MASTOIDITIS
- ACUTE EAR INFECTION

In many health facilities more than one type of antibiotic will be available. You must learn to **select the most appropriate antibiotic** for the child's illness. If the child is able to drink, give an oral antibiotic.

The appropriate oral antibiotic for each illness varies by country. The antibiotics recommended for Sudan were at *TREAT THE CHILD* chart. Refer to the chart on the following page.

Give an Appropriate Oral Antibiotic

➢ **FOR PNEUMONIA, ACUTE EAR INFECTION, MASTOIDITS, VERY SEVERE DISEASE, AND VERY SEVERE FEBRILE DISEADE**

FIRST-LINE ANTIBIOTIC: Oral Amoxicillin

AGE or WEIGHT	**AMOXICILLIN*** *Give two times daily for 5 days*	
	TABLET 250 mg	**SYRUP** 250mg/5 ml
2 months up to 12 months (4 - <10 kg)	1	5 ml
12 months up to 3 years (10 - <14 kg)	2	10 ml
3 years up to 5 years (14-19 kg)	3	15 ml

- ** Amoxicillin is the recommended first-line drug of choice in the treatment of pneumonia due to its efficacy and increasing high resistance to cotrimoxazole.*

- **FOR DYSENTERY give Ciprofloxacine**

FIRST-LINE ANTIBIOTIC: Oral Ciprofloxacine

AGE	**CIPROFLOXACIN** Give 15mg/kg two times daily for 3 days	
	250 mg tablet	500 mg tablet
Less than 6 months	1/2	1/4
6 months up to 5 years	1	1/2

- **FOR CHOLERA:**

FIRST-LINE ANTIBIOTIC FOR CHOLERA:_ **ERYTHROMYCIN**

SECOND-LINE ANTIBIOTIC FOR CHOLERA: _**TETRACYCLINE**

AGE or WEIGHT	**ERYTHROMYCIN** *Give four times daily for 3 days*	**TETRACYCLINE** *Give four times daily for 3 days*
	TABLET 250 mg	**TABLET** 250 mg
2 years up to 5 years (10 - 19 kg)	1	1

Give the "first-line" oral antibiotic if it is available. It has been chosen because it is effective[1], easy to give and inexpensive. You should give the "second-line" antibiotic only if the first-line antibiotic is not available, or if the child's illness does not respond to the first-line antibiotic.

[1] Recommended first-line and second-line antibiotics may need to be changed based on resistance data and national policy.

Some children have more than one illness that requires antibiotic treatment. Whenever possible, select one antibiotic that can treat all of the child's illnesses.

* ***Sometimes one antibiotic can be given to treat more than one illness:***

  For example, a child with PNEUMONIA and ACUTE EAR INFECTION can be treated with a single antibiotic. A child with DYSENTERY and ACUTE EAR INFECTION can be treated with amoxicillin if the first-line antibiotic for an ACUTE EAR INFECTION (amoxicillin) is also a first line antibiotic for DYSENTERY.

  For example, a child with CHOLERA and PNEUMONIA may be treated with amoxicillin since it is the first line antibiotic for pneumonia and first line for cholera.

  When treating a child with more than one illness requiring the same antibiotic, do ***not*** double the size of each dose or give the antibiotic for a longer period of time.

TREAT THE CHILD chart indicates the **schedule** for giving the antibiotic and the **correct dose** of the antibiotic to give to the child.

The **schedule** tells you ***how many days*** and ***how many times each day*** to give the antibiotic. Most antibiotics should be given for 5 days. Dysentery and cholera cases receive antibiotics for 3 days. The number of times to give the antibiotic each day varies (2, 3 or 4 times per day).

To determine the **correct dose** of the antibiotic:

* Refer to the column that lists the concentration of tablets or syrup available in your clinic.

* Choose the row for the child's weight or age. The weight is better than the age for choosing the correct dose. The correct dose is listed at the intersection of the column and row.

Your facilitator will review how to use the chart to select the appropriate oral antibiotic, and determine the schedule and dose in your country.

EXERCISE A

In this exercise you will practice using the box "Give An Appropriate Oral Antibiotic". Use your *TREAT THE CHILD* chart. Select the correct oral antibiotic, and write the dose and schedule for each of the cases below.

Assume that this is the first time each child is being treated for the illness and that the child has no other classification. Record your answer in the space provided.

1. A 6-month-old (7 kg) child needs the first dose of the first line of an antibiotic for MASTOIDITIS.

2. A 2-years-old (11 kg) child needs an antibiotic for PNEUMONIA and ACUTE EAR INFECTION.

3. A child (5 kg) needs an antibiotic for DYSENTERY and ACUTE EAR INFECTION.

4. A 36-month-old child (15 kg) needs an antibiotic for PNEUMONIA and SEVERE DEHYDRATION because there is cholera in the area.

Check your answers with a facilitator when you have finished this exercise.

GIVE AN ORAL ANTIMALARIAL

. Artesunate and Coartem are the first-line and second-line drugs used respectively. The first- and second-line oral antimalarials recommended in Sudan are on your chart. It may be that only the first-line antimalarial is available at your clinic.
Refer to *TREAT THE CHILD* chart to determine the dose and schedule for an oral antimalarial, as you did with oral antibiotics.

Give an Oral Antimalarial

FIRST-LINE ANTIMALARIAL: Artemether 20 MG Lumefantrine 120 mg (Coartem)
SECOND LINE DIHYDROATERMSININEPIPERQUINE

Artemether 20 MG Lumefantrine 120 mg (Coartem)
Give with fatty meals to enhance the absorptiion

Age in years	Weight in Kg	DAY 1		DAY 2		DAY 3		Total NO of tabs
		Initially	8 hours	Morning	Evening	**Morning**	**Evening**	
< 1	< 5 kg	The use is not recommended . Give oral quinine instead.						
<3	5-14	1	1	1	1	1	1	6
3-< 8	15– 24	2	2	2	2	2	2	12
8- 11	25 –34	3	3	3	3	3	3	18
11+	35 +	4	4	4	4	4	4	24

1.2 GIVE AN ORAL ANTIMALARIAL

There are a few important points to remember about giving oral antimalarials:

* Treatment with coartam assumes that the child has not already been treated with Artesumine. Confirm this with the mother. Ask her if her child has already been given a full course of for this coartam fever. If so, and the child still has fever, consider as a follow-up visit. Use the instructions in the box "GIVE FOLLOW-UP CARE - MALARIA" on the *TREAT THE CHILD* chart.

- QUININE IS THE THIRD LINE TREATMENT OF MALARIA

Dosage schedule for Quinine tablet

Dose(10 mg/kg every 8 hrs for 7 days)

Age	Weight/ kg	Numberoftablets/dose(300mg tab) Every 8 hrs for 7 days
< 1 yr	5-6	1/4
1- < 5yrs	11- 14	1/2
5-<8 yrs	19-24	1
8-<11 yrs	25-35	1 1/4
11-< 15	37-50	1 1/2
>15	> 50	2

1.3 Give Paracetamol for High Fever (> 38.5°C) or Ear Pain

- Give paracetamol every 6 hours until high fever or ear pain is gone.

AGE or WEIGHT	**PARACETAMOL**	
	TABLET (120 mg)	**TABLET** (500 mg)
2 months up to 3 years (4 - <14 kg)	1	1/4
3 years up to 5 years (14 - <19 kg)	1 1/2	1/2

If a child has high fever, give one dose of Paracetamol in clinic.

If the child has ear pain, give the mother enough Paracetamol for 1 day, that is, 4 doses. Tell her to give one dose every 6 hours or until the ear pain is gone.

1.4 GIVE VITAMIN A

VITAMIN A

- One dose of vitamin A is given to all children **every 6 months** to **prevent serious illness** any time after 6 months of age.

- One **extra** dose of vitamin A is given to treat children with measles or **PERSISTENT DIARRHOEA** if they have not received a dose of vitamin A within the past month.
    - Vitamin A helps resist the measles virus infection in the eye as well as in the layer of cells that line the lung, gut, mouth and throat. It may also help the immune system to prevent other infections. Corneal clouding, a sign of vitamin A deficiency, can progress to blindness if vitamin A is not given.

- Vitamin A is available in capsules and syrup. Use the child's age to determine the dose. Give one dose of vitamin A to the child in the clinic.

- If the vitamin A in your clinic is in capsule form, make sure the child swallows the capsule whole. If the child is not able to swallow a whole capsule or needs only part of the capsule, open the capsule.
    - Tear off or cut across the nipple with a clean tool. If the vitamin A capsule does not have a nipple, pierce the capsule with a needle.
    - Squirt the vitamin A liquid into the child's open mouth.
    - Make sure that the child swallows all of the liquid. Do not let the child spit it out.

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

* A child with measles should receive 3 doses of vitamin A. Give the first dose to the child in clinic. Give two doses to the mother to give her child the next day and two weeks later at home.

If the child is able to swallow a capsule safely, make sure the child swallows the whole capsule of vitamin A. If the child is not able to swallow a whole capsule or needs only a half of the capsule, open the capsule. Tear off or cut across the nipple with a clean instrument (surgical blade, razor blade, scissors or sharp knife). If the vitamin A capsule does not have a nipple, pierce the capsule with a needle.

* Squirt the vitamin A liquid into the child's open mouth.

* Make sure that the child swallows all of the liquid. Do not let the child spit it out.

Record the date each time you give vitamin A to a child. This is important.

If you give repeated doses of vitamin A in a short period of time, there is danger of an overdose.

AGE	VITAMIN A DOSE
6 up to 12 months	100 000 IU
One year and older	200 000 IU

1.5 GIVE IRON

A child with some palmar pallor may have anaemia. A child with anaemia needs iron. (Make sure that the child has no sickle cell anaemia).

➢ *Give Iron*

- Give one dose daily for 14 days.

AGE or WEIGHT	IRON/FOLATE TABLET Ferrous sulfate 200 mg + 250 mcg Folate (60 mg elemental iron)	IRON SYRUP Ferrous fumarate 100 mg per 5 ml (20 mg elemental iron per ml)
2 months up to 4 months (4 - <6 kg)		1.00 ml (< 1/4 tsp.)
4 months up to 12 months (6 - <10kg)		1.25 ml (1/4 tsp.)
12 months up to 3 years (10 - <14 kg)	1/2 tablet	2.00 ml (<1/2 tsp.)
3 years up to 5 years (14 - 19 kg)	1/2 tablet	2.5 ml (1/2 tsp.)

- A child with some palmar pallor may have anaemia. A child with anaemia needs iron. Give syrup to the child under 12 months of age. If the child is aged 12 months or older, give iron tablets. Give the mother enough iron for 14 days. Tell her to give her child one dose daily for the next 14 days. Ask her to return for more iron in 14 days. Also tell her that the iron may make the child's stools black.

- Tell the mother to keep the iron out of reach of the child. An overdose of iron can be fatal or make the child very ill
- .

Give one dose daily for 14 days.

- . Give one dose daily for 14 days.

AGE or WEIGHT	IRON/FOLATE TABLET	IRON SYRUP
	Ferrous sulfate 200 mg + 250 µg Folate (60 mg elemental iron)	Ferrous fumarate 100 mg per 5 ml (20 mg elemental iron per ml)
2 months up to 4 months (4 - <6 kg)		1.00 ml (< 1/4 tsp.)
4 months up to 12 months (6 - <10 kg)		1.25 ml (1/4 tsp.)
12 months up to 3 years (10 - <14 kg)	1/2 tablet	2.00 ml (<1/2 tsp.)
3 years up to 5 years (14 - 19 kg)	1/2 tablet	2.5 ml (1/2 tsp.)

* Children with severe acute malnutrition who are receiving ready-to-use therapeutic food (RUTF) should not be given Iron

1.6 Give Zinc

1. ***GIVE ZINC*** **(age 2 months up to 5 years)**
   - **TELL THE MOTHER HOW MUCH ZINC TO GIVE (20 mg tab):**

     2 months up to 6 months 1/2 tablet daily for 14 days
     6 months or more 1 tablet daily for 14 days
   - **SHOW THE MOTHER HOW TO GIVE ZINC SUPPLEMENTS**
     - Infants - dissolve tablet in a small amount of expressed breast milk, ORS or clean water in a cup.
     - Older children - tablets can be chewed or dissolved in a small amount of water

-

months up to 6 months	1/2 tablet daily for 14 days
6 months or more	1 tablet daily for 14 days

- ***Give Zinc***

- Give one dose daily for 10-14 days.

Age	Zinc Tablet (20 mg\tablet)
months up to 6 months	1/2 tab
6 months or more	1 tabs

Give the mother enough zinc for 10-14 days, Tell her to give her child one dose daily for this period.

EXERCISE B

In this exercise you will practice using *TREAT THE CHILD* chart to determine the appropriate oral drug, and the correct dose and schedule. Refer to your *TREAT THE CHILD* chart. Select the concentration of each drug that is available at your clinic.

Assume that this is the first time each child is being treated for the illness, unless otherwise indicated. Record your answer in the space provided:

1. A 4-month-old needs an antibiotic for an ACUTE EAR INFECTION and an oral antimalarial for MALARIA.

2. A 12-kg-child needs an oral antimalarial for MALARIA and Paracetamol for high fever.

3. A 9-month-old needs vitamin A for MEASLES.

4. A 12-month-old child with diarrhoea needs zinc therapy

5. A 6-month-old child needs zinc treatment for dysentery.

Check your answers with a facilitator when you have finished this exercise.

2.0 USE GOOD COMMUNICATION SKILLS

A child who is treated in a clinic needs to continue treatment at home. The success of home treatment depends on how well you communicate with the child's mother. She needs to know how to give the treatment. She also needs to understand the importance of the treatment.

Good communication is important when teaching a mother to give treatment at home.

* **Ask** questions to find out what the mother is already doing for her child.
* **Praise** the mother for what she has done well.
* **Advise** her how to treat her child at home.
* **Check** the mother's understanding.

} These skills are described below.

2.1 ADVISE THE MOTHER HOW TO TREAT HER CHILD AT HOME

Some advice is simple. For example, you may only need to tell the mother to return with the child for follow-up in 2 days. Other advice requires that you teach the mother **how to do** a task. Teaching how to do a task requires steps.

Think about how you learned to write, cook or do any other task that involved special skills. You were probably first given instruction. Then you may have watched someone else doing the task. Finally you tried doing it yourself.

When you teach a mother how to treat a child, use 3 basic teaching steps:

1. Give **information**.
2. Show an **example**.
3. Let her **practice**.

GIVE INFORMATION: Explain to the mother how to do the task. For example, explain to the mother how to:

* apply eye ointment,
* prepare ORS, or
* soothe a sore throat.

SHOW AN EXAMPLE: Show how to do the task. For example, show the mother:

* how to hold a child still and apply eye ointment,
* a packet of ORS and how to mix the right amount of water with ORS, or
* a safe remedy to soothe the throat which she could make at home.

LET HER PRACTICE: Ask the mother to do the task while you are watching. In For example, let the mother:

* apply eye ointment in her child's eye,
* mix ORS solution, or
* describe how she will prepare a safe remedy to soothe the throat.

It may be enough to ask the mother to describe how she will do the task at home.

Letting a mother ***practice*** is the most important part of teaching a task. If a mother **does** a task while you observe, you will know what she understands and what is difficult. You can then help her do it better. The mother is more likely to remember something that she has **practiced** than something she has heard.

WHEN TEACHING THE MOTHER:

* Use words that she understands.

* Use teaching aids that are familiar, such as common containers for mixing ORS solution.

* Give feedback when she practices. Praise what was done well and make corrections. Allow more practice, if needed.

* Encourage the mother to ask questions. Answer all questions.

2.2 CHECK THE MOTHER'S UNDERSTANDING

After you teach a mother how to treat her child, you want to be sure that she understands how to give the treatment correctly. Checking questions find out what a mother has learned.

An important communication skill is knowing how to ask good checking questions. A checking question must be phrased so that the mother answers more than "yes" or "no". Good checking questions require that she describe **why, how** or **when** she will give a treatment.

From her answer you can tell if she has understood you and learned what you taught her about the treatment. If she cannot answer correctly, give more information or clarify your instructions.

For example, you taught a mother how to give an antibiotic. Then you ask:

"Do you know how to give your child his medicine?"

The mother would probably answer "yes" whether she understands or not. She may be embarrassed to say she does not understand. However, if you ask a few good checking questions, such as:

"When will you give your child the medicine?"

"How many tablets will you give each time?"

"For how many days will you give the tablets?"

you are asking the mother to repeat back to you instructions that you have given her. Asking good checking questions helps you make sure that the mother learns and remembers how to treat her child.

The following questions check a mother's understanding. "Good checking questions" require the mother to describe ***how*** she will treat her child. They begin with question words, such as **why**, **what**, **how**, **when**, **how many**, and **how much**. The "poor questions", answered with a "yes" or "no", do not show you how much a mother knows.

GOOD CHECKING QUESTIONS	POOR QUESTIONS
How will you prepare the ORS solution?	Do you remember how to mix the ORS?
How often should you breastfeed your child?	Should you breastfeed your child?
On what part of the eye do you apply the ointment?	Have you used ointment on your child before?
How much extra fluid will you give after each loose stool?	Do you know how to give extra fluids?
Why is it important for you to wash your hands?	Will you remember to wash your hands?

After you ask a question, pause, give the mother a chance to think and then answer. Do ***not*** answer the question for her. Do ***not*** quickly ask a different question.

Asking checking questions requires patience. The mother may know the answer, but she may be slow to speak. She may be surprised that you really expect her to answer. She may fear her answer will be wrong. She may feel shy to talk to an authority figure. Wait for her to answer. Give her encouragement.

If the mother answers incorrectly or says she does not remember, be careful not to make her feel guilty. Teach her to give the treatment again. Give more **information**, **examples** or **practice** to make sure she understands. Then ask her good checking questions again.

A mother may understand but may say that she cannot do when you ask. She may have a problem or objection. Common problems are lack of time or resources to give the treatment. A mother may object that her sick child was given an oral drug rather than an injection, or a home remedy rather than a drug.

Help the mother think of possible solutions to her problems and respond to her objections. For example:

If you ask,

> "When will you apply the eye ointment in your child's eye?"
>
> The mother may answer that she will not be at home during the day. She may tell you that she can only treat her child in the morning and in the night.
>
> Ask her if she can identify someone (a grandparent, an older sibling) who will be at home during the day and can give the mid-day treatment. Help her plan how she will teach that person to give the treatment correctly.

If you ask,

"What container will you use to measure 1 litre of water for mixing ORS?"

The mother may answer that she does not have a 1-litre container at home.

Ask her what containers she does have at home. Show her how to measure1 litre of water in her container. Explain how to mark the container at 1 litre with an appropriate tool or how to measure 1 litre using several smaller containers.

If you ask,

"How will you soothe your child's throat at home?"

A mother may answer that she does not like the remedy that you recommended. She expected her child to get an injection or tablets instead.

Convince her about the importance of the safe remedy rather than the drug. Make the explanation clear. She may need to explain the reason for the safe remedy to family members who also expected the child to be treated differently.

WHEN CHECKING THE MOTHER'S UNDERSTANDING:

* Ask questions that require the mother to explain what, how, how much, how many, when, or why. Do ***not*** ask questions that can be answered with just "yes" or "no".

* Give the mother time to think and then answer.

* Praise the mother for correct answers.

* If she needs, give more **information**, **examples** or **practice**.

EXERCISE C

In this exercise you will review good communication skills. Answer the questions in the space provided.

1. Nurse Alawia must teach a mother to wick her child's ear dry.

   First she explains how drying the ear will help the child, and how to do it. Then she shows the mother how to make a wick and dry the child's ear. Then, Nurse Alawia asks the mother to practice wicking the child's ear while she observes and offers feedback. Before the mother and the child leave the clinic, Nurse Alawia asks the mother several questions. She wants to make sure the mother understands why, how and when to give the treatment at home.

   a. What information did Nurse Alawia give the mother about the treatment?

   b. In the paragraph above, underline the sentence that describes how the nurse gave examples.

   c. What did the nurse do while the mother was practicing?

2. Health worker Saeed must teach a mother to prepare ORS solution for her child with diarrhoea. First he explains how to mix the ORS, then he shows her how to do it. He asks the mother, "Do you understand?" The mother answers "yes". So Saeed gives her 2 ORS packets and says good-bye.

   a. What information did Saeed give the mother about the task?

   b. Did he show her an example?

c. Did he ask her to practice?

d. Did Saeed check the mother understands correctly?

e. How would you have checked the mother's understanding?

3. Nurse Steven gives some oral antibiotics to a mother for her child. Before he explains how to give them, Steven asks the mother if she knows how to give her child the medicine. The mother nods her head yes. So Steven gives her the antibiotics and says good-bye.

   If a mother tells you that she already knows how to give a treatment, what should you do?

4. The following questions can be answered "yes" or "no". Rewrite the questions as good checking questions.

   a. Do you remember when to give the antimalarial?

   b. Do you understand how much syrup to give your child?

   c. Can you wick your child's ears?

When you finish this exercise, discuss your answers with a facilitator.

3.0 TEACH THE MOTHER TO GIVE ORAL DRUGS AT HOME

The oral drugs listed on the chart are given for different reasons, in different doses and on different schedules. However, the way to give each drug is similar.

This section will teach you the basic steps of teaching mothers to give oral drugs. If a mother learns how to give a drug correctly, then the child will be treated properly. Follow the instructions below for every oral drug you give to the mother.

- **Determine the appropriate drugs and dosage for the child's age or weight.**

  Use *TREAT THE CHILD* chart to determine the appropriate drug and dosage to give the child.

- **Tell the mother the reason for giving the drug to the child, including:**

  * why you are giving the oral drug to her child, and

  * what problem it is treating.

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

  Bring the container of the drug and check its expiry date. Do not use expired drugs. Count out the amount needed for the child. Close the container.

  If you are giving the mother **tablets (not capsules):**

  Show the mother the amount to give per dose. If needed, show her how to divide a tablet. If a tablet has to be crushed before it is given to a child, add a few drops of clean water and wait a minute or so. The water will soften the tablet and make it easier to crush.

  If you are giving the mother **syrup:**

  Show the mother how to measure the correct amount of milliliters (ml) for one dose at home. Use the bottle cap or a common spoon, such as a spoon used to stir sugar into tea or coffee. Show her how to measure the correct dose with the spoon.

One teaspoon (tsp) equals approximately 5.0 ml (see below).

MILLILITRES (ml)	TEASPOONS (tsp)
1.25 ml	¼ tsp
2.5 ml	½ tsp
5.0 ml	1 tsp
7.5 ml	1½ tsp
10.0 ml	2 tsp
15.ml	3 tsp

Adjust the above amounts based on the common spoons in your area.

If you are giving the mother vitamin A **capsules**:

Show the mother the amount to give per dose. If a child needs a half vitamin A capsule (or cannot swallow a whole capsule), show the mother how to open the capsule and squirt a half or all of the liquid into the child's mouth.

- **Watch the mother practice measuring a dose by herself.**

Ask the mother to measure a dose by herself. If the dose is in tablet form and the child cannot swallow a tablet, tell the mother to crush the tablet. Watch her as she practicing. Tell her what she has done correctly. If she measured the dose incorrectly, show her again how to measure it.

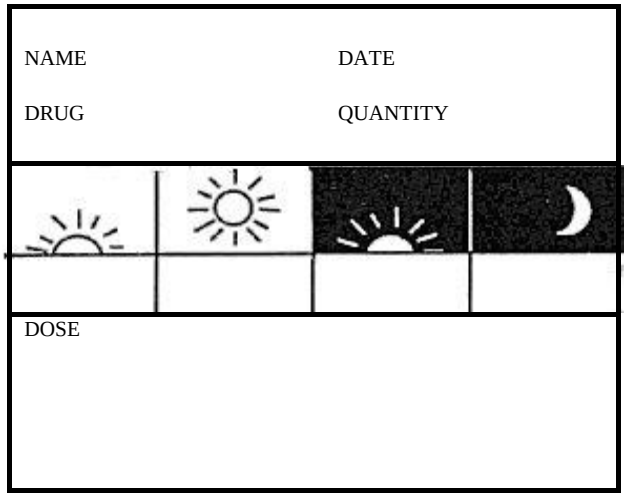
- **Ask the mother to give the first dose to her child.**

Explain that if a child is vomiting, give the drug even though the child may vomit it up. Tell the mother to watch the child for 30 minutes. If the child vomits within the 30 minutes (the tablet or syrup may be seen in the vomit), give another dose. If the child is dehydrated and vomiting, wait until the child is rehydrated before giving the dose again.

- **Explain carefully how to give the drug, then label and pack the drug.**

Tell the mother how much of the drug to give her child. Tell her 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.

Write the information on a drug label. This is an example:



To write information on a drug label:

a. Write the full name of the drug and the total amount of tablets, capsules or syrup to complete the course of treatment.

b. Write the correct dose for the patient to take (number of tablets, capsules, squirts or spoonfuls that is, ½, 1, and 1½...). Write when to give the dose (early morning, lunch, and dinner before going to bed).

c. Write the daily dose and schedule, such as

½ tablet twice daily for 5 days

Write the instructions clearly so that a literate person is able to read and understand them.

Put the total amount of each drug into its own labelled drug container (an envelope, paper, tube or bottle). Keep drugs clean. Use clean containers.

After you have labelled and packed the drug, give it to the mother. Ask checking questions to make sure she understands how to treat her child. Examples like Arabic

- **If more than one drug will be given, collect, count and pack each drug separately.**
  Collect one drug at a time. Write the instructions on the label. Count out the amount needed. Put enough of the drug into its own-labelled package. Finish packaging the drug before you open another drug container.

  Explain to the mother that her child is getting more than one drug because he has more than one illness. Show the mother the different drugs. Explain how to give each drug. If necessary, draw a summary of the drugs and times to give each drug during the day.
- **Explain that all the oral drug tablets or syrups must be used to finish the course of treatment, even if the child gets better.**
  Explain to the mother that if the child seems better, continue to treat the child. This is important because the bacteria or the malaria parasite 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 drugs in a dry and dark place that is free of mice and insects.

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

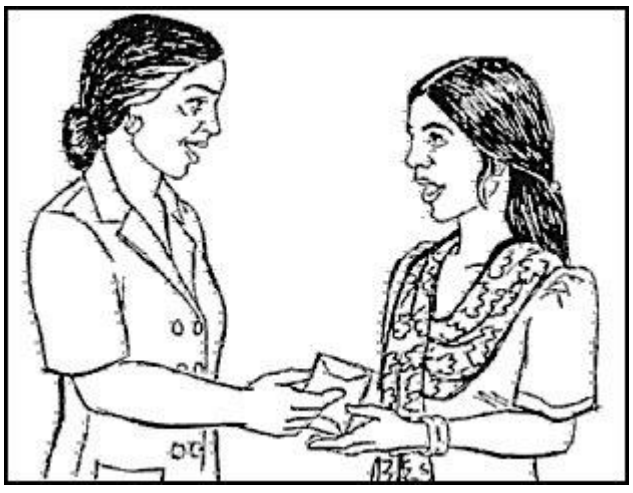
  Ask the mother checking questions, such as:

  "How much will you give each time?"
  "When will you give it?" "For how many days?"
  "How will you prepare this tablet?"
  "Which drug will you give 3 times per day?"

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

In some clinics, a drug dispenser has the task of teaching the mother to give treatment and checking the mother's understanding. If this is your situation, teach the skills you are learning here to that dispenser.

Have the dispenser read and do the exercises in section 2.0 - Use Good Communication Skills and section 3.0 - Teach the Mother to Give Oral Drugs at Home. Give information, examples and practice, as needed.



Check that the dispenser is doing this important task well. Ask mothers a few checking questions before they leave the clinic. You will know from their answers if the dispenser has taught them how to give the treatment correctly.

EXERCISE D

Read the case description. Answer the questions. Refer to your *TREAT THE CHILD* chart and use the recommended drugs for your country.

> Seven-month-old (7 kg) Wafaa was brought to the clinic because she is coughing and seems very sick. After assessing Wafaa, the health worker finds that she has no general danger signs, no diarrhoea, no fever and no ear problems. She has cough with fast breathing, but no chest indrawing and no stridor. The health worker classifies Wafaa as having PNEUMONIA and NO ANAEMIA . The health worker will give an oral antibiotic.

1. Determine the appropriate antibiotic, dose and schedule for Wafaa. Write it in the space below.

2. Write the major steps of how to teach Wafaa's mother to give the oral antibiotic to her child in the space that follows.

   *

   *

   *

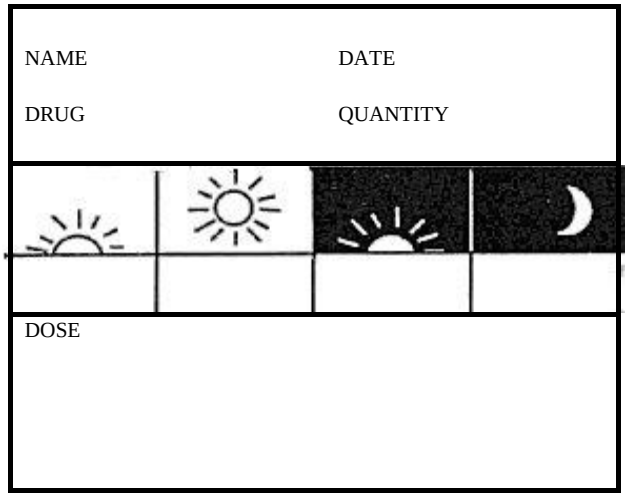
   *

   *

   *

   *

3. Show how you would label the drug envelope for Wafaa's mother.



4. List at least 3 checking questions to ask Wafaa's mother to make sure she understands how to give the oral antibiotic.

5. When should the mother bring Wafaa back to the clinic for a follow-up visit? When should the mother bring Wafaa back immediately?

Discuss your answers with the facilitator when you finish this exercise.

EXERCISE E

In this exercise you will participate in a role play that teaches mothers to give oral drugs at home.

THE SITUATION -- What has happened so far:

Imad is an 8-month-old (5 kg) boy, lives in a region where the risk of malaria is high. His mother brought him to the clinic because he has fever. fever has been present for 4 days.

A health worker finds that Imad has no general danger sign, no cough, no diarrhoea and no ear problem. He has fever of 38° C, with no stiff neck, or measles. He has some palmar pallor. The health worker classifies Imad as MALARIA and ANAEMIA

To treat MALARIA, the health worker decides to give coartam tabs. Day 1(½ tab SP and ½ tab As) Then ½ As for the coming 2 days.

To treat ANAEMIA, the health worker notes that Imad needs ¼ tsp of iron syrup.

(NOTE: The health worker should advise Imad's mother about feeding, but that is not included in this role play. You will learn how to give feeding advice in the next module *Counsel the Mother*.)

HEALTH WORKER:
To start the role play, tell the mother that Imad needs Artesumine and iron syrup. Teach the mother how to give the oral drugs at home. Give the mother all necessary information, show her how to give the drugs, and observe her giving the first dose of the drugs to her child. Then advise the mother when to return to the clinic immediately and when to return for follow-up care. Check the mother's understanding.

MOTHER:
Listen carefully to the instructions that the health worker gives you. Ask questions if you do not understand the instructions. Answer any questions you are asked by the health worker.

OBSERVERS:

Watch the role play. Do not interfere. Read the following questions and answer them as you watch.

a. Does the health worker ***give information*** to the mother about why the oral drugs are important, and how/when to give them?

b. Does the health worker ***show*** the mother ***examples*** of how to measure a dose of each drug?

c. Does the health worker observe the mother:
practice measuring a dose of each drug, and
practice giving the drug to her child?

d. Does the health worker correctly label and package the drugs?

e. Does the health worker tell the mother when to return immediately?
Does the health worker tell her when to return for follow-up care?

f. Does the health worker check the mother's understanding?

g. What checking questions does the health worker ask? What other checking questions would you ask?

After the role play, discuss your answers
with the other participants and facilitator.

4.0 TEACH THE MOTHER TO TREAT LOCAL INFECTIONS AT HOME

This section of the module will teach you how to treat local infections. Local infections include (cough), sore throat, eye infection, mouth ulcers, and ear infection.

You will also learn how to teach a mother to treat a local infection at home. When teaching a mother:

- **Explain to the mother what the treatment is and why it should be given.**
- **Describe the treatment steps listed in the appropriate box below.**
- **Watch the mother as she does the first treatment in the clinic (except remedy for cough or sore throat).**
- **Tell her how often to do the treatment at home.**
- **If needed, for treatment at home, give mother the tube of tetracycline ointment or a small bottle of gentian violet.**
- **Check the mother's understanding before she leaves the clinic.**

Some treatments for local infections cause discomfort. Children often resist having their eyes, ears or mouth treated. Therefore, it is important to hold the child still. This will prevent the child from interfering with the treatment.

The drawing on the right shows a good position for holding a child. Tilt the child's head back when applying eye ointment or treating mouth ulcers. Tilt the child's head to the side when wicking the ear.

Do ***not*** attempt to hold the child still until Lust before treatment.

4.1 TREAT EYE INFECTION WITH TETRACYCLINE EYE OINTMENT

➢ *Treat Eye Infection with Tetracycline Eye Ointment*

➢ Clean both eyes 3 times daily.

- Wash hands.
- Ask child to close the eye.
- Use clean cloth and water to gently wipe away pus.

➢ Then apply tetracycline eye ointment in both eyes 3 times daily.

- Ask the child to look up.
- Squirt a small amount of ointment on the inside of the lower lid.
- Wash hands again.

➢ Treat until redness is gone.

➢ Do not use other eye ointments or drops, or put anything else in the eye.

If the child will be referred, clean the eye gently. Pull down the lower lid. Squirt the first dose of tetracycline eye ointment into the lower eyelid. The dose is about the size of a grain of rice.

ACTUAL SIZE OF TETRACYCLINE EYE OINTMENT

SIZE OF DOSE (similar to size of a grain of rice)

If the child is not being referred, teach the mother to apply the tetracycline eye ointment. Give the mother the following **information**: she should treat both eyes to prevent damage to the eyes, the ointment will slightly sting the child's eye.

Tell the mother to:

* Wash her hands before and after treating the eye.

* Clean the child's eyes Lust before applying the tetracycline eye ointment. Use a clean cloth to wipe the eye.

* Repeat the process (cleaning the eye and applying ointment) 3 times per day, in the morning, at mid-day and in the evening.

Then **show the mother** how to treat the eye. Be sure to wash your hands.

* Hold down the lower lid of your eye. Point to the lower lid. Tell the mother that this is where she should apply the ointment. Tell her to be careful that the tube does not touch the eye or lid.

* Have someone hold the child still.

* Wipe one of the child's eyes with the cloth. Squirt the ointment onto the lower lid. Make sure the mother sees where to apply the ointment and the amount (the size of a grain of rice).

Ask the mother to **practice** cleaning and applying the eye ointment into the child's other eye. Observe and give feedback as she practices. When she is finished, give her the following additional information.

* **Treat both eyes until the redness is gone from the infected eye.** The infected eye is improving if there is less pus in the eye or the eyes are not stuck shut in the morning.

* Do ***not*** put any other eye ointments, drops or alternative treatments in the child's eyes. They may be harmful and damage the child's eyes. Putting harmful substances in the eye may cause blindness.

* After 2 days, if there is still pus in the eye, bring the child back to the clinic.

Then give the mother the tube of ointment to take home. Give her the same tube you used to treat the child in the clinic.

Before the mother leaves, ask **checking questions**. Check that she understands how to treat the eye. For example, ask:

"Will you treat one or both eyes?"

"How much ointment you will put in the eyes? Show me."

"How often will you treat the eyes?"

"When will you wash your hands?"

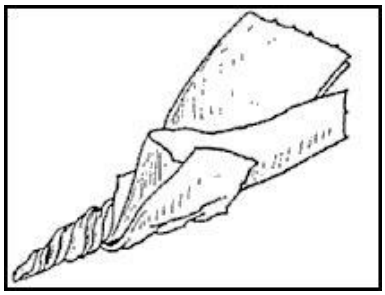
4.2 DRY THE EAR BY WICKING

➢ *Dry the Ear by Wicking*

- ➢ Dry the ear at least 3 times daily.
- Roll clean absorbent cloth or soft, strong tissue paper into a wick.
- Place the wick in the child's ear.
- Remove the wick when wet.
- Replace the wick with a clean one and repeat these steps until the ear is dry.

To teach a mother how to dry the ear by wicking, first **tell her** it is important to keep an infected ear dry to allow it to heal. Then **show** her how to wick her child's ear.

As you are wicking the child's ear, tell the mother to:

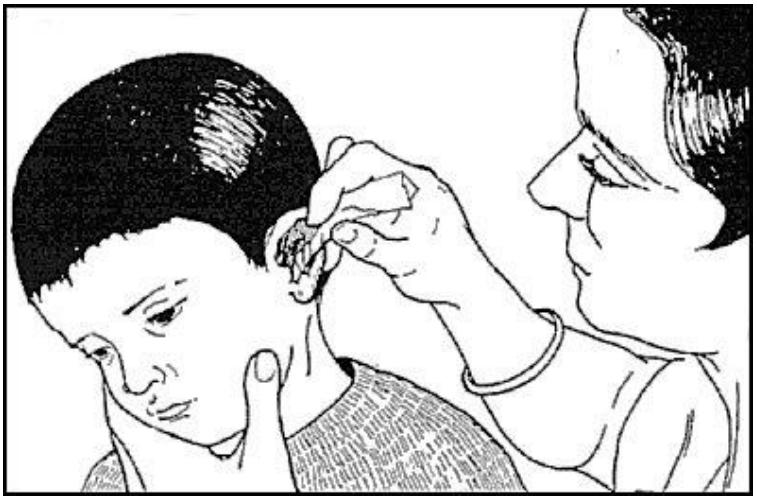


* Use clean, absorbent cotton cloth or soft strong tissue paper for making a wick. Do ***not*** use a cotton-tipped applicator, a stick or flimsy paper that will fall apart in the ear.

* Place the wick in the child's ear until the wick is wet.

* Replace the wet wick with a clean one.

* Repeat these steps until the wick stays dry. Then the ear is dry.



Observe the mother as she practices. Give feedback. When she finishes, give her the following information.

∗Wick the ear 3 times daily.

∗Use this treatment **for as many days as it takes** until the wick no longer gets wet when put in the ear and no pus drains from the ear.

∗Do ***not*** put anything (oil, fluid, or other substance) in the ear between wicking treatments. Do ***not*** allow the child to go swimming. No water should get in the ear.

Ask checking questions, such as:

"What materials will you use to make the wick at home?"

"How many times per day will you dry the ear with a wick?"

"What else will you put in your child's ear?"

If the mother thinks she will have problems wicking the ear, help her solve them.

4.3 TREAT MOUTH ULCERS WITH GENTIAN VIOLET

TEACH THE MOTHER HOW TO TREAT LOCAL INFECTIONS AT HOME

Treat mouth thrush with nystatine or *Gentian Violet*

Treating thrush controls infection and helps the child to eat.

Teach the mother to treat thrush with nystatine.

If the mother is breastfeeding, check her breasts for thrush. If present, teach her also to treat the thrush with nystatine four times a day for 7 days.

Give the following **information**. Tell the mother:

- Her child will start eating normally sooner if she instills nystatine into her child's mouth. It is important that the child eats.
- Wash hands.
- Clean the child's mouth. Wrap a clean soft cloth around her finger. Dip it in salt water. Wipe the mouth.
- For mouth thrush: Instill nystatine 1 ml four times a day. The nystatine will kill germs that cause the thrush
- Wash hands again.
- Do not feed the child for 20 minutes after giving nystatine.
- If the child is breastfed: Wash your breasts after feeds.
- If the child is bottle fed: advise to change to cup and spoon.
- Give paracetamol if needed for pain.
- Treat the thrush for 7 days.

Also Teach the mother to treat mouth ulcers with half-strength gentian violet[2]. Give her the following **information**. Tell her:

* Her child will start eating normally sooner if she paints the mouth ulcers in her child's mouth. It is important that the child eats.

* Clean the child's mouth. Wrap a clean soft cloth around her finger. Dip it in salt water. Wipe the mouth.

* Use a clean cloth or a cotton-tipped stick to paint gentian violet on the mouth ulcers. The gentian violet will kill germs that cause the ulcers. Put a small amount of gentian violet on the cloth or stick. Do ***not*** let the child drink the gentian violet.

* Treat the mouth ulcers 2 times per day, in the morning and evening.

* Treat the mouth ulcers for 5 days and then stop.

Wrap a clean cloth around your finger and dip it into salt water. **Show the mother** how to first wipe the child's mouth clean. Then paint half of the child's mouth with half-strength gentian violet.

Ask the mother to **practice**. Watch her wipe the child's mouth clean and paint the rest of the ulcers with gentian violet. Comment on the steps she did well and those that need to be improved.

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

Before the mother leaves, **ask checking questions**. For example, ask:

"What will you use to clean the child's mouth?"

"When will you wash your hands?"

"How often will you treat the child's mouth?" "For how many days?"

Ask if she anticipates any problems providing the treatment. Help her solve them.

4.4 SOOTHE THE THROAT, RELIEVE COUGH WITH A SAFE REMEDY

To soothe the throat or relieve cough, use a safe remedy. Such remedies can be homemade, given at the clinic, or. It is important that they are ***safe***. Homemade remedies are as effective as those bought in a pharmacy.

> ➢ ***Soothe the Throat, Relieve the Cough with a Safe Remedy***
>
> - Safe remedies to recommend:
> - Breastmilk for exclusively breastfed infant.
> - Karkadeh, Lemon juice, Bee honey, Ginger.
> - Harmful remedies and practices to discourage:
> - All cough medicines
> - Removal of the uvula
> - The use of oil as nasal drops

TREAT THE CHILD chart recommends safe, soothing remedies for children with sore throat or cough. If the child is exclusively breastfed, do ***not*** give other drinks or remedies. Breast milk is the best soothing remedy for an exclusively breastfed child.

Harmful remedies and practices may be used in your area. If so, they have been recorded in the box. Never use remedies that contain harmful ingredients, such as atropine, codeine or codeine derivatives, or alcohol. These items may sedate the child. They may interfere with the child's feeding. They may also interfere with the child's ability to cough up secretions from the lungs. Medicated nose drops (that is, nose drops that contain anything other than salt) should also not be used. Removal of the uvula does not relieve cough and can lead to severe bleeding which is dangerous for the child.

When explaining how to give the safe remedy, it is not necessary to watch the mother practice giving the remedy to the child. Exact dosing is not important with this treatment.

TEACH THE MOTHER TO GIVE READY -TO-USE THERAPEUTIC FOOD (RUTF)

RUTF is used for the home treatment of children classified as **UNCOMPLICATED SEVERE ACUTE MALNUTRITION** who passed the appetite test as described in the *ASSESS & CLASSIFY* chart and Part 1: Assess and classify child, Training unit "Check for acute malnutrition and anaemia".

It means that you have already **explained** to the mother what is RUTF and how to give it. The mother has already successfully **practised** giving the RUTF to the child during the appetite test. After the child passed the appetite test you explained to the mother that the child can be treated with RUTF at home.

Reinforce the **information** already given now and give the mother additional information about feeding the child at home:

- Your child is malnourished and needs to eat the Ready-to-Use Therapeutic Food (RUTF) until he or she will grow well again. Ready-to-Use Therapeutic Food (RUTF) is ready to use, as its name indicates. That means it does not need cooking, or any other process before feeding the child. It is high energy food contained in a concentrated form, enriched with minerals and vitamins to replenish a severely malnourished child.
- RUTF is a food and medicine for malnourished children. It is only for the child and it should not be shared by other members of the family.
- Give small, regular meals of the RUTF and encourage the child to eat often 5–6 meals per day - every three to four hours.
- If the mother is breastfeeding, tell her:
    - You should continue breastfeeding as many times a day as the child wants.
    - Offer the breast to the child before each RUTF feed.
- When you feed the RUTF to the child:
    - Wash hands before giving the RUTF.
    - Sit with the child on her lap and gently offer the child RUTF to eat.
    - Encourage the child to eat the RUTF. If the child refuses, continue to quietly encourage the child and take your time. Do not force the child to eat the RUTF.
- Offer plenty of clean water to drink from a cup when the child is taking the RUTF.

Find the amount of RUTF needed in table “Recommended amounts of RUTF” in the TREAT chart, give the mother the number of RUTF packages needed until the next follow-up visit, and tell her:

- The child should be able to eat (number of packets needed each day) RUTF packets each day. I give you now (number of packets needed for one week) RUTF packets. This is the amount that the child needs until you bring the child back to the clinic for a follow-up visit. Return for the follow-up visit in 7 days.

Instructions about other food than RUTF: Give the mother only information relevant at the particular follow-up visit:

- Advise the mother to give only the ready-to-use therapeutic food and to breastfeed the child for at least two weeks.
- If the child is recovering well, advise the mother then to gradually introduce foods recommended for the age (See Feeding recommendations in *COUNSEL THE MOTHER* chart).
- When introducing recommended foods, ensure that the child completes his daily ration of RUTF before giving other foods: always give the RUTF before other foods.

Check the mother's understanding before she leaves the clinic – ask checking questions

DETERMINE PRIORITY OF ADVICE

When a child has only one problem to be treated, give all of the relevant treatment instructions and advice listed on the charts. When a child has several problems, the instructions to mothers can be quite complex. In this case, you will have to limit the instructions to what is most important.
You will have to determine:

- How much can **this** mother understand and remember?
- Is she likely to come back for follow-up treatment? If so, Some advice can wait until then.
- What advice is most important to get the child well?

If a mother seems confused or you think that she will not be able to learn or remember all the treatment instructions, select only those instructions that are most essential for the child's survival.
Essential treatments include giving antibiotic or antimalarial drugs *and* giving fluids to a child with diarrhoea. Teach the few treatments well and check that mother remembers them.

If necessary, omit or delay the following:

- Feeding assessment and feeding counselling
- Soothing remedy for cough or cold
- Paracetamol*
- Second dose of vitamin A*
- Iron treatment
- Wicking an ear

You can give the other treatment instructions when mother returns for the follow-up visit.

---

* Give the first dose of paracetamol or vitamin A. Do ***not*** dispense the other doses. Do ***not*** overwhelm the mother with instruction for later doses.

EXERCISE F

GROUP FEEDBACK

In this exercise you will answer questions about how to teach a mother to treat local infections at home. You will also practice determining priority of advice.

PART 1: Teaching a mother to treat local infections at home.

1. Treat an Eye Infection

   a. What would you tell a mother about why it is important to treat an eye infection?

   b. What major step of how to teach a mother to treat an eye infection is missed from the list below?

   * Explain how and why to treat the eye.
   * Demonstrate how to clean the eye and apply tetracycline eye ointment.
   * Tell her how often and for how many days to treat the eye and tell her not to put anything else in the child's eye.
   * Give her one tube of eye ointment.
   * Ask checking questions to make sure she understands the instructions.

   c. Change these questions into checking questions.

   1. Do you know how to treat your child's eye?

   2. Can you hold your child still while you apply the ointment?

2. Treat Mouth Ulcers

a. What would you tell a mother about why it is important to treat mouth ulcers?

b. What are the major steps you would follow when teaching a mother to treat mouth ulcers at home?

c. List 3 checking questions you could ask to make sure the mother understands how to treat mouth ulcers at home.

3. Soothe Throat, Relieve Cough with a Safe Remedy

a. What is meant by a "safe" remedy? Give an example.

b. Give at least 2 examples of remedies that are not safe.

c. When should a child classified as NO PNEUMONIA: COUGH OR COLD return immediately for treatment?

PART 2: Practice determining priority of advice.

The facilitator will read loudly a case description for a child named Sumaia.

1. Listen to the case description of Sumaia. Write the findings of Sumaia's assessment and classification on the recording form on the next page.

2. Identify all of Sumaia's treatments. List the treatments on the recording form.

3. The facilitator will continue reading the case description.

4. Review your list of treatments, instructions and advice that Sumaia needs. Which ones are the most important for the health worker to teach the grandmother?

5. Which treatments, instructions or advice could be omitted or delayed if the grandmother is clearly overwhelmed?

When everyone is ready, there will be a group discussion.

MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Date:----------

Name: _____ Age: _____ Weight: _____ kg Temperature: _____°C
ASK: What are the child's problems? _____ Initial visit? ___ Follow-up Visit? ___

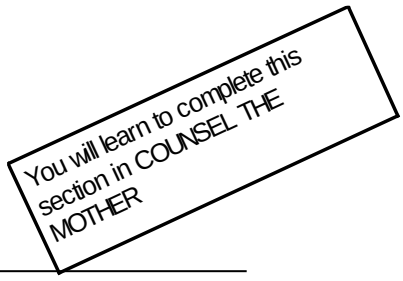
ASSESS (Circle all signs present)	**CLASSIFY**
ASK AND CHECK FOR GENERAL DANGER SIGNS NOT ABLE TO DRINK OR BREASTFEED VOMITS EVERYTHING CONVULSIONS LETHARGIC OR UNCONSCIOUS CONVULSING NOW	General danger signs present? Yes___ No___ **Remember to use danger sign when selecting classifications**
DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING? Yes___ No___ • For how long? ____ Days • Count the breaths in one minute. _____ breaths per minute. Fast breathing? • Look for chest indrawing. • Look and listen for stridor. • Look and listen for wheezing.	
DOES THE CHILD HAVE DIARRHOEA? Yes ___ No __ • For how long? _____ Days • Is there blood in the stools? • Look at the child's general condition. Is the child: Lethargic or unconscious? Restless or irritable? • Look for sunken eyes. • Offer the child fluid. Is the child: Not able to drink or drinking poorly? Drinking eagerly, thirsty? • Pinch the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds)? Slowly?	
DOES THE CHILD HAVE FEVER? (by history/feels hot/temperature 37.5°C or above) Yes___ No___ • For how long? _____ Days • If more than 7 days, has fever been present every day? • Has child had measles within the last three months? (Decide Malaria Risk: high low) • Look or feel for stiff neck • Look for runny nose. • Check BF result: +ve -ve • Look for signs of MEASLES: • Generalized rash	
If the child has measles now or within the last 3 months: • Look for mouth ulcers. If Yes, are they deep and extensive? • Look for pus draining from the eye. • Look for clouding of the cornea.	
DOES THE CHILD HAVE AN EAR PROBLEM? Yes___ No___ • Is there ear pain? • Is there ear discharge? If Yes, for how long? ___ Days • Look for pus draining from the ear. • Feel for tender swelling behind the ear.	
THEN CHECK FOR MALNUTRITION AND ANAEMIA • Look for visible severe wasting. • Look for clouding of the cornea. • Look for palmar pallor. Severe palmar pallor? Some palmar pallor? • Look for oedema of both feet. • Determine weight for age. Very Low ___ Not Very Low ___	
CHECK THE CHILD'S IMMUNIZATION AND VITAMIN A SUPPLEMENTATION STATUS Circle immunizations needed. BCG, Penta1, Penta 2, Penta 3, OPV 0, OPV 1, OPV 2, OPV 3, Measles, Measles (Poster Dose), Vitamin A Supplementation, Rota1, Rota2, PCV1, PCV2, PCV3	Return for next immunization on: _____ (Date)
ASSESS CHILD'S FEEDING if child has ANAEMIA OR VERY LOW WEIGHT or is less than 2 years old. • Do you breastfeed your child? Yes____ No ____ If Yes, how many times in 24 hours? ___ times. Do you breastfeed during the night? Yes___ No___ • Does the child take any other food or fluids? Yes___ No ___ If Yes, what food or fluids? _____ How many times per day? ___ times. What do you use to feed the child? ___ • During the illness, has the child's feeding changed? Yes ____ No ____ If Yes, how? If very low weight for age: How large are servings? _____ Does the child receive his own serving? ___ Who feeds the child and how? _____	FEEDING PROBLEMS
ASSESS OTHER PROBLEMS:	

TREAT

Remember to refer any child who has a danger sign and no other severe classification.

Return for follow-up in: _____
Advise mother when to return immediately.
Immunizations needed: _____
- **Give** _____
- Arrange later _____
- Guide to service _____

Feeding advice: _____



5.0 GIVE THESE TREATMENTS IN CLINIC ONLY

In the module *IDENTIFY TREATMENT*; you learned to refer a child with a severe classification urgently to a hospital. You may have to give one or more of the following treatments in the clinic before the child leaves for the hospital.

* Intramuscular antibiotic if the child cannot take an oral antibiotic
* Quinine for severe malaria
* Diazepam for current convulsions
* Breast milk or sugar water to prevent low blood sugar

When giving an intramuscular antibiotic or quinine:

- **Explain to the mother why the drug is given.**
- **Determine the dose according to intramuscular antibiotics and quinine tables.**
- **Use a sterile needle and a sterile syringe. Measure the dose accurately.**
- **Give the drug as intramuscular injection.**
- **If child cannot be referred, follow the instructions given.**

5.1 GIVE AN INTRAMUSCULAR ANTIBIOTIC

A child may need an antibiotic before he leaves for the hospital. When the child:

* is not able to drink or breastfeed, or
* vomits everything, or
* has convulsions, or
* is lethargic or unconscious,

he cannot take an oral antibiotic. Give this child a single dose of ampicillin and gentamycin by intramuscular injection. Then refer the child urgently to the hospital.

Give Ampicillin (50 mg/kg) and Gentamicin (7.5 mg/kg).

AMPICILLIN

- Dilute 500mg vial with 2.1ml of sterile water (500mg/2.5ml).
- IF REFERRAL IS NOT POSSIBLE OR DELAYED, repeat the ampicillin injection every 6 hours.
- **Where there is a strong suspicion of meningitis, the dose of ampicillin can be increased 4 times.**

GENTAMICIN

- 7.5 mg/kg/day once daily

AGE or WEIGHT	**AMPICILLIN** 500 mg vial	**GENTAMICIN** 2ml/40 mg/ml vial
2 up to 4 months (4 - <6 kg)	1 m	0.5-1.0 ml

5.2 GIVE QUININE FOR SEVERE MALARIA

A child classified as VERY SEVERE FEBRILE DISEASE may have severe malaria, such as cerebral malaria. To kill malaria parasites as quickly as possible, give a quinine injection before referral. Quinine is the preferred antimalarial because it is effective in most areas of the world[4] and it acts rapidly. Intramuscular quinine is also safe.

Possible side effects of a quinine injection are a sudden drop in blood pressure, dizziness, ringing of the ears, and a sterile abscess. If a child's blood pressure drops suddenly, the effect stops after 15-20 minutes. Dizziness, ringing of the ears and abscess are of minor importance in the treatment of a very severe disease.

[4] Quinine is preferred except in limited areas in Southeast Asia and South America where national guidelines have established alternative treatments.

Use the following table to determine the dose. Determine the dose by weight if the child can be weighted. The dose is 10 mg/kg.
To reduce the risk of sterile abscess, you can dilute the quinine to a concentration of 60 mg/ml. The amount of diluent for each dose to obtain a concentration of 60 mg/ml is shown in the box below.

➢ *Give Quinine for Severe Malaria*

FOR CHILDREN BEING REFERRED WITH VERY SEVERE FEBRILE DISEASE:

- ➢ Check quinine formulation available in your clinic.
- ➢ Be sure the child is well hydrated.
- ➢ Give first dose of intramuscular quinine and refer child urgently to hospital.

IF REFERRAL IS NOT POSSIBLE:

- ➢ Give first dose of intramuscular quinine.
- ➢ The child should remain lying down for one hour.
- ➢ Repeat the quinine injection every 8 hours until the child is able to take orally, and then continue quinine orally to complete 7 days. Do not continue injections, for more than one week.
- ➢

Dosage Dilution Schedule for intra-muscular Quinine (600mg/2ml) using insulin syringe
*

Age	Weight/ kg	Quinine injection(ml)	Normal saline or distilled water for dilution(ml)	Total injection volume (ml)
< 4 month	5-6	0.2	0.8	1
4-11 month	7-10	0.3	1.2	1.5
1yr-<2yrs	11-14	0.4	1.6	2
2yrs-2-<5 yrs	15-18	0.6	2.6	3

Dosage Dilution Shedule for intra- muscular Quinine (600mg/2ml) using 5 ml syringe

Age	Weight/kg	Volume of Quinine injection in lines
< 4 month	5-6	5 lines= 1ml
4-11 month	7-10	8 lines=1 ½ ml
1yr-< 2yrs	11-14	10 lines= 2 ml
2yrs-< 5 yrs	15-18	15 lines= 3 ml

NB: each 1 ml standard 5 ml syringe contains 5 lines

Procedures for Giving Chloramphenicol and Quinine Injections

Follow these steps when giving a quinine or chloramphenicol injection if *you are skilled* to give an intramuscular injection. If not, *ask someone who is skilled* to give the injection. (Later someone can teach you how to give the injections.)

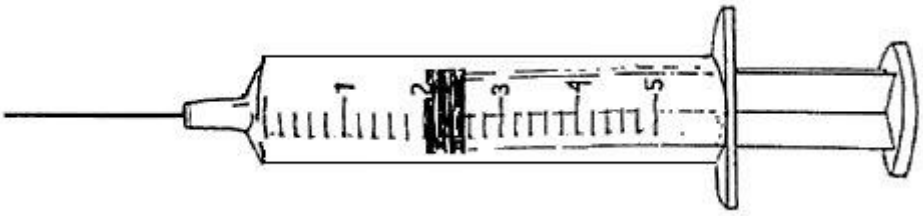
1. Use the *TREAT THE CHILD* chart to determine the appropriate dose. Check which concentration is available in your clinic. Make sure you read the chart correctly for the concentration you are using.

2.QUININE: Dilute the quinine solution. Quinine may be packaged as a solution containing 300 mg per ml, in 2 ml ampoules. The 300 mg/ml solution should be diluted in syringe. First, draw the dose indicated for the child from the quinine ampoule into a syringe. Then draw into the same syringe the amount of sterile water (diluent) specified in the box for the dose of quinine that you selected. For example, if the child weights 12kg, draw up 0.5 ml of quinine solution and then 2.0 ml for sterile water. The total will be 2.5 ml.

It is very important that the amount of quinine is measured accurately. Do not use a syringe larger than 3 ml.

3. Use a sterile needle and syringe to give the injection.

Below is an illustration of the type of syringe used for intramuscular injections. Measure the dose accurately.



5.3 TREAT A CONVULSING CHILD WITH DIAZEPAM

Diazepam is the main treatment for current convulsions. (It is not indicated for a history of convulsions during the illness). The treatment of convulsions also includes

managing the airway to be sure the child can breathe, reducing high fever rapidly, and treating the child to prevent low blood sugar.

➢ *Treat a Convulsing Child with Diazepam*

Manage the Airway

- Turn the child on his or her side to avoid aspiration.
- Do not insert anything in the mouth to keep it open.
- If the lips and tongue are blue, open the mouth and make sure the airway is clear.
- If necessary, remove secretions by suction from the throat through a catheter inserted through the nose.

Give Diazepam Rectally

- Draw up the dose from an ampoule of diazepam into a small syringe, then remove the needle.
- Insert approximately 5 cm of nasogastric tube or the tip of the syringe into the rectum.
- Inject the diazepam solution into the nasogastric tube and flush it with 2 mls room-temperature water.
- Hold buttocks together for a few minutes.

If High Fever, Lower the Fever

- Sponge the child with room-temperature water.

Treat the child to prevent low blood sugar

AGE or WEIGHT	**DIAZEPAM** 10mg/2mls
2 months up to 6 months (5 - 7 kg)	0.5 ml
6 months up to 12months (7 - <10 kg)	1.0 ml
12 months up to 3 years (10 - <14 kg)	1.5 ml
3 years up to 5 years (14-19 kg)	2.0 ml

* **Give diazepam rectally**

  – Obtain an intravenous ampoule of diazepam. Determine the correct dose of diazepam according to the age or weight of the child.

  – Draw up the diazepam dose into small syringe (preferably 2 ml) and then **remove the needle.**

  – Draw up 2 ml of room temperature water in another syringe and then **remove the needle.**

  – Insert a short piece of nasogastric tube (approximately 5 cm) into the rectum.

  – Inject the diazepam solution into the rectum through the nasogastric tube. Then flush it by injecting the room temperature water.

  – Remove the tube and hold the buttocks together for a few minutes.

  – If nasogastric tube is not available, insert the tip of a 2-ml syringe into the rectum. Inject the diazepam solution into the rectum.

  – Remove the syringe and hold the buttocks together for a few minutes.

  – Expect the effect in few minutes. If convulsions continue, repeat same dose in **10 minutes.** Repeat the dose only once, because diazepam can cause respiratory depression.

* **If high fever, lower the fever**

  A high fever can be the cause of a convulsion. Therefore it is important to rapidly reduce the fever. Sponge the child with lukewarm water to reduce the fever immediately. Sponging is justified only in a child with convulsions because it is important to reduce the high fever as soon as possible. When a child is convulsing actively, it is not safe to administer oral drugs such as paracetamol because of the risk of aspiration. Wait until the child is fully awake before giving paracetamol.

* **Treat the child to prevent low blood sugar:**

  Children who are convulsing may have low blood sugar. After the convulsions are controlled, treat the child to prevent low blood sugar as described in section 5.5. Avoid giving a large volume of fluid, in case the child convulses again. Too much fluid could lead to aspiration.

5.4 *RAPID ACTING BRONCHODILATOR*

- A bronchodilator is a drug that helps some children with a wheeze to breathe easier by relaxing the muscles in the bronchi walls so that the bronchi open up. Bronchodilators act rapidly when given by injection or inhaled as a vapour. This is why they are called "rapid acting". Salbutamol is the most common and effective bronchodilator.

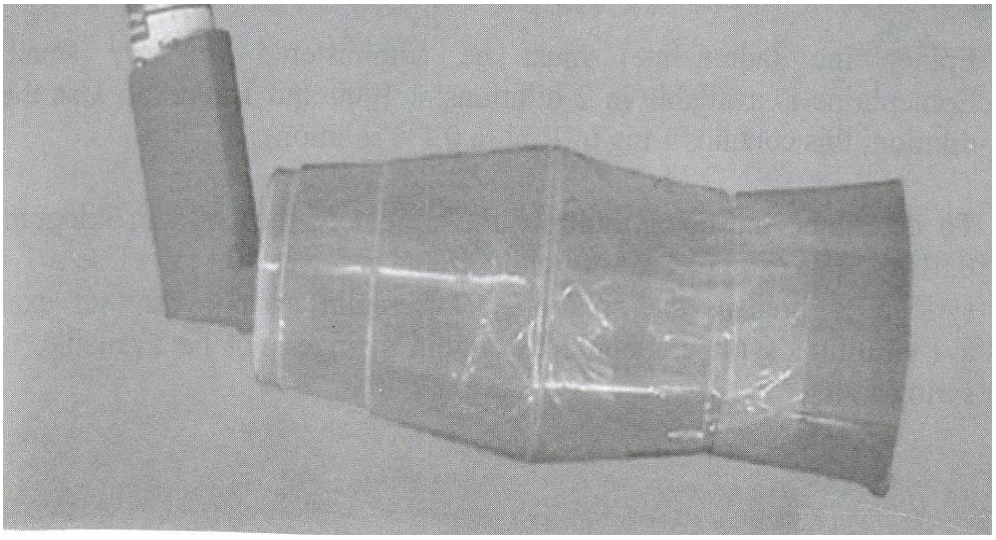
Give inhaled salbutamol for trial before classifying cough or difficulty breathing

- All children presenting with a wheeze and either fast breathing or chest indrawing should get a trial with a rapid acting bronchodilator, given up to three times 15-20 minutes apart, before their cough or difficulty breathing is classified. If chest indrawing or fast breathing disappears, then antibiotic treatment is not needed.
- Salbutamol for inhalation is available in a metered-dose inhaler. This is a small container that puts out a measured dose of fine particles of salbutamol as a spray that can be inhaled. Children under 5 years old find it difficult to take a big breath in at the moment that the inhaler is triggered and blows out the dose. To overcome this problem, a spacer is needed.
- A spacer is like a large plastic bottle with an opening at each end. The dose of medicine is blown into one end so that the particles are in the air in the spacer. The spacer has a mouthpiece or face mask at the other end. Spacers are available commercially or you may make one from a plastic bottle as described in the *TREAT THE CHILD* chart.
    - Give 2 puffs from salbutamol metered dose inhaler with spacer (100 micrograms/puff). Wait for 15-20 minutes. Then count the breaths and look for chest indrawing again.
    - If the fast breathing and chest indrawing has disappeared, classify cough or difficulty breathing.
    - If the fast breathing and/or chest indrawing have not disappeared, repeat the first step.
    - If the fast breathing and/or chest indrawing still have not disappeared repeat the first step for the third time and then classify cough or difficulty breathing.

Give inhaled salbutamol for home treatment

- Children with wheezing should continue getting 2 puffs of inhaled bronchodilator three times daily for 5 days. In settings where an inhaler is not available, oral salbutamol may be the second choice.

- You will learn how to teach the mother to give inhaled salbutamol for home treatment in training unit "Teach the mother to give treatment at home



5.5 TREAT THE CHILD TO PREVENT LOW BLOOD SUGAR

Preventing low blood sugar is an ***urgent pre-referral treatment*** for children with VERY SEVERE FEBRILE DISEASE.

Low blood sugar occurs in serious infections such as severe malaria or meningitis. It also occurs when a child has not been able to eat for many hours. It is dangerous because it can cause brain damage.

Giving some breastmilk, breastmilk substitute, or sugar water provides some glucose to treat and prevent low blood sugar. This treatment is given once, before the child is referred to the hospital.

➢ *Treat the Child to Prevent Low Blood Sugar*

- ***If the child is able to breastfeed:***

  Ask the mother to breastfeed the child.

- ***If the child is not able to breastfeed but is able to swallow:***

  Give expressed breastmilk or a breastmilk substitute. If neither of these is available, give sugar water. Give 30-50 ml of milk or sugar water before departure.

  To make sugar water: Dissolve 4 level teaspoons of sugar (20 grams) in a 200-ml cup of clean water.

- ***If the child is not able to swallow:***

  Give 50 ml of milk or sugar water by nasogastric tube.

EXERCISE G

In this exercise you will determine correct doses and practice measuring different dosages of drugs.

Practice determining correct doses.

1. What dose would you give the following children?

Child's weight	If IM antibiotics is needed	If Quinine is needed (300 mg/ml)	Diluent	Total Diluted Solution
7 kg	_____	_____	_____	_____
18 kg	_____	_____	_____	_____

2. What are the possible side effects of quinine injection?

3. Martin, a 12-month-old (10 kg) boy, was brought to the clinic this morning because he has had fever for 2 days and has been sleeping since yesterday.

A health worker assessed Martin and found that he is unconscious. He classified Martin as VERY SEVERE FEBRILE DISEASE and NO ANAEMIA .

The health worker will give Martin an intramuscular antibiotic and quinine. He will also give him sugar water by nasogastric tube to prevent low blood sugar. Then the health worker will refer Martin urgently to the nearest hospital.

Specify the dose of each treatment that Martin will receive.

Ampicillin and gentamcin : _____

Quinine: _____

Sugar water by NG tube: _____

When you have finished Part 1,
discuss your answers with the other members of your group.

6.0 GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

You have learned to assess a child with diarrhoea, classify dehydration and select one of the following treatment plans:

Plan A - Treat Diarrhoea at Home
Plan B - Treat Some Dehydration with ORS
Plan C - Treat Severe Dehydration Quickly

All three plans provide fluid to replace water and salts lost in diarrhoea. An excellent way to both rehydrate and prevent dehydration in a child is to give him a solution made with oral rehydration salts (Low osmolar ORS). IV fluid should be used only in cases of SEVERE DEHYDRATION.

The only type of diarrhoea that should be treated with antibiotics are diarrhoea with SEVERE DEHYDRATION with cholera in the area and DYSENTERY[6]. The antibiotics for cholera and DYSENTERY are discussed in sections 1.1 and 6.5.

You will now learn how to do Plans A, B and C.

6.1 PLAN A: TREAT DIARRHOEA AT HOME

This section describes PLAN A, treatment of a child who has diarrhoea with NO DEHYDRATION. The 3 Rules of Home Treatment are:

1. GIVE EXTRA FLUID (as much as the child will take)
2. CONTINUE FEEDING
3. WHEN TO RETURN

This section describes how to counsel the mother on the first rule of home treatment, give extra fluid. You will teach the mother to prevent dehydration by giving the child extra fluid. Extra fluid means more fluid than usual. Information about how to continue feeding the child will be discussed in the module *Counsel The Mother*. You

[6] Antibiotics are not effective in treating most diarrhoea. They rarely help and may make some children sicker. Unnecessary use of antibiotics may increase the resistance of some pathogens. In addition, antibiotics are costfull. Money is often wasted on ineffective treatment. Therefore, do not give antibiotics routinely. Only give antibiotics in diarrhoea cases with SEVERE DEHYDRATION with cholera in the area and DYSENTERY.

Never give antidiarrhoeal drugs and antiemetics to children and infants. They rarely help in treating diarrhoea, and some are dangerous. The dangerous drugs include antimotility drugs (such as codeine, tincture of opium, diphenoxylate, loperamide) or drugs to treat vomiting (such as chlorpromazine). Some of these harmful drugs can cause paralysis of the gut, or they can make the child abnormally sleepy. Some can be fatal, especially if used in infants. Other antidiarrhoeal drugs, though not dangerous, are not effective diarrhoea treatments. These include adsorbents such as kaolin, attapulgite, smectite and activated charcoal. Using antidiarrhoeal drugs may cause delay in ORT treatment.

learned when a mother should return to a health worker in the previous module, *Identify Treatment*.

Plan A is an important treatment plan. Children with diarrhoea who come to a health worker with NO DEHYDRATION will be put on Plan A. Children with dehydration need to be rehydrated on Plan B or C, then on Plan A. Eventually, all children with diarrhoea will be on Plan A.

Plan A involves counselling the child's mother about the 3 Rules of Home Treatment. Therefore, your teaching and advising skills are very important for Plan A. Now study Plan A.

➢ *Plan A: Treat Diarrhoea at Home*

Counsel the mother on the 3 Rules of Home Treatment:
Give Extra Fluid, Continue Feeding, When to Return

1. ***GIVE EXTRA FLUID*** (as much as the child will take)

- **TELL THE MOTHER:**
  - Breastfeed frequently and for longer at each feed.
  - If the child is exclusively breastfed, give ORS or clean water in addition to breastmilk.
  - If the child is not exclusively breastfed, give one or more of the following: ORS solution, food-based fluids (such as soup, rice water, Nasha, Roub, Goubasha, and yoghurt drinks), or clean water.

It is especially important to give ORS at home when:
- *the child has been treated with Plan B or Plan C during this visit.*
- *the child cannot return to a clinic if the diarrhoea gets worse.*

- **TEACH THE MOTHER HOW TO MIX AND GIVE ORS. GIVE THE MOTHER 2 PACKETS OF ORS TO USE AT HOME.**

- **SHOW THE MOTHER HOW MUCH FLUID TO GIVE IN addition TO THE USUAL FLUID INTAKE:**

Up to 2 years	50 to 100 ml after each loose stool
2 years or more	100 to 200 ml after each loose stool

Tell the mother to:
- Give frequent small sips from a cup.
- If the child vomits, wait 10 minutes. Then continue, but more slowly.
- Continue giving extra fluid until the diarrhoea stops.

2. CONTINUE FEEDING

3. WHEN TO RETURN

} **See *COUNSEL THE MOTHER* chart**

GIVE EXTRA FLUID

* **TELL THE MOTHER:**

Give as much fluid as the child can take. The purpose of giving extra fluid is to replace the fluid lost in diarrhoea and thus to prevent dehydration. The critical action is to give more fluid than usual, as soon as diarrhoea starts.

Tell the mother to breastfeed frequently and for longer at each feed. Also explain that she should give other fluids. ORS solution is one of several fluids recommended for home use to prevent dehydration.

If the child is exclusively breastfed, it is important for this child to be breastfed more frequently than usual. Also give ORS solution or clean water. Breastfed children under 4 months should first be offered a breastfeed then given ORS.

If a child is not exclusively breastfed, give one or more of the following:

- ORS solution
- Food-based fluids
- Clean water

In most cases a child who is not dehydrated does not really need ORS solution. Give him extra food-based fluids such as soups, rice water, Nasha, Roub, Goubasha, and yoghurt drinks, and clean water (preferably given along with food).

Plan A lists 2 situations in which it is specially important that the mother should give ORS solution at home.

1. <u>The child has been treated on Plan B or C during this visit.</u> In other words, the child has just been rehydrated. For this child, drinking ORS solution will prevent dehydration .

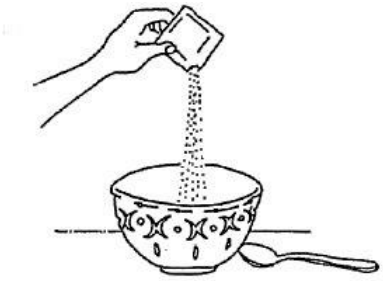
2. <u>The child cannot return to a clinic if the diarrhoea gets worse.</u> For example, the family lives far away or the mother has a job that she cannot leave.

➢ **TEACH THE MOTHER HOW TO MIX AND GIVE ORS. GIVE THE MOTHER 2 PACKETS OF ORS TO USE AT HOME.**

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

The steps for making ORS solution are:

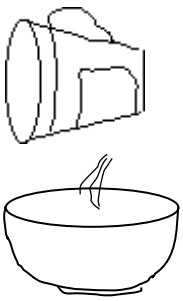
* Wash your hands with soap and water.



* 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). You can use a jar or 6 glasses to measure 1 litre. It is best to boil and cool the water, but if this is not possible, use the cleanest drinking water available.



* Pour 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.

Give the mother 2 packets of ORS to use at home. (Give 2 one-litre packets or the equivalent.)

* **SHOW THE MOTHER HOW MUCH FLUID TO GIVE IN ADDITION TO THE USUAL FLUID INTAKE:**

Explain to the mother that her child should drink the usual fluids that the child drinks each day ***and*** extra fluid. Show the mother how much extra fluid to give after each loose stool:

Up to 2 years	**50 to 100 ml after each loose stool**
2 years or more	**100 to 200 ml after each loose stool**

Explain to the mother that 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.

Use a Mother's Card and Check the Mother's Understanding

Some health workers have Mother's Cards to give mothers to take home[8]. A Mother's Card helps the mother remembering important information, including what kind of fluids and food to give her child.

To indicate the type of fluids a mother should give her child, tick the appropriate box or boxes in the card's "Fluid" section. (Use a pencil to mark the card so that the instructions can be changed, if needed, at a later visit.)

* Tick the box for ORS if you give the child ORS.

* Tick the other two boxes for water and for other fluids ***unless the child is exclusively breastfed***. Exclusively breastfed children should be breastfed more frequently and can drink clean water or ORS solution. Exclusively breastfed children should not be given food-based fluids such as soup, rice water, Nasha, Roub, Goubasha, or yoghurt drinks.

Below are examples of how to tick the "Fluid" section of the Mother's Card for a child who will receive ORS on Plan A:

If the child is not exclusively breastfed, all 3 boxes get ticked.

FLUIDS

ANY SICK CHILD

- Breastfeed frequently.
- Increase fluid: Give Nasha, Roub, Gobasha, Rice water.

FOR CHILD WITH DIARRHOEA

- Give these extra fluids, as much as the child will take:
  - ☑ ORS Solution
  - ☑ Food-based fluids, such as Nasha, Roub, Gobasha, Rice water,
  - ☑ Clean water
- Breastfeed more frequently and longer at each feeding.
- Continue giving extra fluids until diarrhoea stops.

If the child is exclusively breastfed, only 2 boxes get ticked.

FLUIDS

ANY SICK CHILD

- Breastfeed frequently.
- Increase fluid: Give Nasha, Roub, Gobasha, Rice water.

FOR CHILD WITH DIARRHOEA

- Give these extra fluids, as much as the child will take:
  - ☑ ORS Solution
  - ☐ Food-based fluids, such as Nasha, Roub, Gobasha, Rice water,
  - ☑ Clean water
- Breastfeed more frequently and longer at each feeding.
- Continue giving extra fluids until diarrhoea stops.

[8] The use of the Mother's Card will be more fully taught in the module *Counsel the Mother*.

Before the mother leaves, check her understanding of how to give extra fluid according to Plan A. Use questions such as:

- What kinds of fluid will you give?
- How much fluid will you give your child?
- How often will you give the ORS solution to your child?
- Show me how much water you will use to mix ORS.
- How will you give ORS to your child?
- What will you do if the child vomits?

Ask the mother what difficulties she expects when she gives fluid to her child. For example, if she says that she does not have time, help her plan how to teach someone else to give the fluid. If she says that she does not have a one-litre container for mixing ORS, show her how to measure one litre using a smaller container. Or, show her how to measure one litre in a larger container and mark it with an appropriate tool.

The Second and Third Rules of Home Treatment for Diarrhoea

The *second rule of home treatment* is CONTINUE FEEDING.

In the module, *Counsel the Mother*, you will learn to counsel on feeding. If a child is classified as PERSISTENT DIARRHOEA, you will teach the mother some special feeding recommendations.

The ***third rule of home treatment*** is **WHEN TO RETURN**.

You have learned the signs when a mother should return immediately to a health worker. Tell the mother of any sick child that the signs to return are:

- Not able to drink or breastfeed
- Becomes sicker
- Develops a fever

If the child has diarrhoea, also tell the mother to return if the child has:

- Blood in stool
- Drinking poorly

"Drinking poorly" includes "not able to drink or breastfeed." These signs are listed separately, but it may be easier to combine them. You could simply tell the mother to return if the child is "drinking or breastfeeding poorly."

EXERCISE H

1. Samson is a 4-year-old boy who has diarrhoea. He has no general danger signs. He was classified as having diarrhoea with NO DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. He will be treated according to Plan A.

   a. What are the three rules of home treatment of diarrhoea?

      --
      --
      --

   b. What fluids should the health worker tell his mother to give?

2. Elfatih is a 3-month-old boy who has diarrhoea. He has no general danger signs. He was classified as NO DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. He is exclusively breastfed.
   What should the health worker tell his mother about giving him extra fluids?

3. For which children with NO DEHYDRATION is it especially important to give ORS at home?

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   --

4. The following children came to the clinic because of diarrhoea. They were assessed and found to have no general danger signs. They were classified as NO DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. Write the amount of extra fluid that the mother should give after each stool.

	Name	**Age**	**Amount of extra fluid to give after each loose stool**
a)	Ghada	6 months	
b)	Sam	2 years	

5. A 4-years-old boy has diarrhoea. He has no general danger signs. He was classified as NO DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. The health worker has taught his mother Plan A and given her 2 packets of ORS to use at home.

Tick all the fluids that the mother should encourage her son to drink as long as the diarrhoea continues.

— a. Concentrated fruit juice that the child usually drinks each day
— b. Water from the water jug. The child can get water from the jug whenever he is thirsty
— c. ORS after each loose stool

6. A mother brought her 11-months-old daughter, Aviva, to the clinic because she has diarrhoea. Aviva usually eats cereal and bits of meat, vegetables and fruit. Her mother has continued to breastfeed her as well. The mother says she lives far from the clinic and might not be able to come back for several days, even if the child gets worse.

The health worker assesses Aviva and finds she has no general danger signs and no other disease classifications. He classified her as NO DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. He decides that Aviva needs treatment according to Plan A.

a. Should the health worker give this mother ORS packets to take home? If so, how many one-litre packets should he give?

b. Mark this Mother's Card for Aviva's mother.

FLUIDS

ANY SICK CHILD

- Breastfeed frequently.
- Increase fluid: Give Nasha, Roub, Gobasha, Rice water.

FOR CHILD WITH DIARRHOEA

- Give these extra fluids, as much as the child will take:
  - ☐ ORS Solution
  - ☐ Food-based fluids, such as Nasha, Roub, Gobasha, Rice water,
  - ☐ Clean water
- Breastfeed more frequently and longer at each feeding.
- Continue giving extra fluids until diarrhoea stops.

c. Write 3 questions to ask Aviva's mother to make sure she understands how to mix and give ORS solution.

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d. How long should Aviva's mother continue giving extra fluid?

e. The health worker will tell the mother to continue feeding Aviva. He will also teach her the signs to return immediately. What signs should the health worker teach Aviva's mother?

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

6.2 PLAN B: TREAT SOME DEHYDRATION WITH ORS

This section describes Plan B, treatment of a child 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. Refer to Annex B if you need to set up an ORT corner.

A child who has a severe classification and SOME DEHYDRATION needs urgent referral to hospital[8]. Do ***not*** try to rehydrate the child before he leaves. Quickly give the mother some ORS solution. Show her how to give frequent sips of it to the child on the way to the hospital.

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

After 4 hours, reassess and classify the child for dehydration using the *ASSESS AND CLASSIFY* chart. If the signs of dehydration are gone, the child is put on Plan A. If there is still some dehydration, the child repeats Plan B. If the child now has SEVERE DEHYDRATION, the child would be put on Plan C.

Now study Plan B.

➢ *Plan B: Treat Some Dehydration with ORS*

Give in clinic recommended amount of ORS over 4-hour period

➢ **DETERMINE AMOUNT OF ORS TO GIVE DURING FIRST 4 HOURS.**

AGE*	Up to 4 months	4 months up to 12 months	12 months up to 2 years	2 years up to 5 years
WEIGHT	< 6 kg	6 -< 10 kg	10 -< 12 kg	12 - 19 kg
In ml	200 - 400	400 - 700	700 - 900	900 - 1400

** Use the child's age only when you do not know the weight. The approximate amount of ORS required (in ml) can also be calculated by multiplying the child's weight (in kg) times 75.*

- If the child wants more ORS than shown, give more.
- For infants under 6 months who are not breastfed, also give 100-200 ml clean water during this period.

➢ **SHOW THE MOTHER HOW TO GIVE ORS SOLUTION.**

- Give frequent small sips from a cup.
- If the child vomits, wait 10 minutes. Then continue, but more slowly.
- Continue breastfeeding whenever the child wants.

➢ **AFTER 4 HOURS:**

- Reassess the child and classify the child for dehydration.
- Select the appropriate plan to continue treatment.
- Begin feeding the child in clinic.

➢ **IF THE MOTHER MUST LEAVE BEFORE COMPLETING TREATMENT:**

- Show her how to prepare ORS solution at home.
- Show her how much ORS to give to finish 4-hour treatment at home.
- Give her enough ORS packets to complete rehydration. Also give her 2 packets as recommended in Plan A.
- Explain the 3 Rules of Home Treatment:

1. GIVE EXTRA FLUID

2. CONTINUE FEEDING

3. WHEN TO RETURN

[8] The exception is a child with the severe classification, SEVERE PERSISTENT DIARRHOEA. This child should be rehydrated then referred.

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

Use the chart in Plan B to determine how much ORS to give. A range of amounts is given. Look below the child's weight (or age if the weight is not known) to find the recommended amount of ORS to give. For example, a 5-kg-child will usually need 200-400 ml of ORS solution in the first 4 hours.

The amounts shown in the box are to be used as guides. The age or weight of the child, the degree of dehydration and the number of stools passed during rehydration will all affect the amount of ORS solution needed. The child will usually want to drink as much as he needs. If the child 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 the box. Multiply the child's weight (in kilograms) by 75. For example, a child weighing 8 kg would need:

$$8 \text{ kg} \times 75 \text{ ml} = 600 \text{ ml of ORS solution in 4 hours}$$

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, then resume the ORS solution. For infants under 6 months who are not breastfed, the mother should give 100-200 ml clean water during the first 4 hours in addition to the ORS solution. The breast milk and water will help prevent hypernatraemia[9] in infants.

➢ SHOW THE MOTHER HOW TO GIVE ORS SOLUTION.

Find a comfortable place in the clinic for the mother to sit with her child. 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. If the child is less than 2 years, show her how to give a spoonful frequently. If the child is older, show her how to give frequent sips from a cup. Sit with her while she gives the child the first few sips from a cup or spoon. Ask her if she has any questions.

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

[9] If a child has hypernatraemia, a child has excessive sodium in his blood.

Encourage the mother to pause to breastfeed whenever the child wants to. When the child finishes breastfeeding, resume giving the ORS solution again. The mother should not give the child food during the first 4 hours of treatment with ORS.

Show the mother where she can change the child's nappy or where the child can use a toilet or potty. Show her where to wash her hands and the child's hands afterwards. Check with the mother from time to time to see if she has problems. If the child is not drinking the ORS solution well and there is still signs of dehydration, 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 child. However, the first concern is to rehydrate the child. When the child 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 child. The information can also be reinforced by posters on the wall.

- **AFTER 4 HOURS:**

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

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

If the child 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 child extra fluid at home.

Note: If the child'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 child has been rehydrated and does not need any more ORS solution at this time. The child should be given clean water or breastmilk. The mother should give ORS solution according to Plan A when the puffiness is gone.

If the child still has SOME DEHYDRATION, choose Plan B again. Begin feeding the child in clinic. Offer food, milk or juice. After feeding the child, repeat the 4-hour Plan B treatment. Offer food, milk and juice every 3 or 4 hours. Breastfed children 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 child is worse and now has SEVERE DEHYDRATION, you will need to begin Plan C (discussed later in this module).

➢ IF THE MOTHER MUST LEAVE BEFORE COMPLETING TREATMENT:

Sometimes a mother must leave the clinic while her child is still on Plan B, that is, before the child 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:*

1. GIVE EXTRA FLUID

   Explain what extra fluids to give. Since the child is being treated with Plan B during this visit, the mother should give ORS at home. Explain how much ORS solution to give after each loose stool.

2. CONTINUE FEEDING

   Instruct her how to continue feeding during and after diarrhoea. This is discussed in the module *Counsel the Mother*.

3. WHEN TO RETURN

   Teach her the signs to bring a child back immediately. These signs are on the *COUNSEL THE MOTHER* chart and the Mother's Card.

EXERCISE I

1. The following children came to the clinic because of diarrhoea. They were assessed and found to have SOME DEHYDRATION and NO ANAEMIA Write the range of amounts of ORS solution each child is likely to need in the first 4 hours of treatment:

	Name	Age or Weight	Range of Amounts of ORS Solution
a)	William	3 years	
b)	Mansour	10 kg	
c)	Aisha	7.5 kg	

2. Shadia is 5 months old and has diarrhoea. She is classified as SOME DEHYDRATION and NO ANAEMIA There is no scale for weighing Shadia in the small clinic. Shadia's mother died during childbirth, so Shadia has been taking infant formula. The grandmother has recently started giving cooked cereal as well.

a. Shadia should be given _____ ml of _____during the first _____ hours of treatment. She should also be given_____ ml of _____ during this period.

b. What should the grandmother do if Shadia vomits during the treatment?

c. When should the health worker reassess Shadia?

d. When Shadia is reassessed, she has NO DEHYDRATION. What treatment plan should Shadia be put on?

e. How many one-litre packets of ORS should the health worker give the grandmother?

f. To continue treatment at home, the grandmother should give Shadia_____ ml of _____ after each _____.

3. A mother and her child must leave the clinic before the child is fully rehydrated. What should the health worker do before the mother leaves? Complete the list below:

* Show her how to prepare ORS solution at home.

*

*

* Explain the 3 Rules of Home Treatment:

1.

2.

3.

Ask the facilitator to review your answers when you have finished the exercise.

EXERCISE J

In this role play a health worker will teach a mother how to care for a dehydrated child. In the first part, the child needs Plan B. In the second part, the child is ready for Plan A.

THE SITUATION -- What has happened so far:

A young mother brought the 2-years-old Manal to the clinic because she has had diarrhoea for 1½ days. The health worker found no general danger signs. There was no blood in the stool. Manal was irritable. Her eyes looked sunken. When pinched, the skin of Manal's abdomen went back immediately. She drank eagerly. She had no other problems. The health worker classified Manal as SOME DEHYDRATION. She has no other disease classifications and NO ANAEMIA The health worker selected Plan B treatment with ORS solution.

HEALTH WORKER:
To start the role play, tell the mother that Manal needs treatment with ORS. Ask the mother to stay at the clinic to give Manal ORS solution. Then follow Plan B to get the mother started giving ORS solution. Show the mother how much ORS to give. Show her how to give it Remember to give the mother zinc syrup for diarrhoea and advise her how to give it to manal. Answer her questions and help with any problems.

MOTHER:
Listen to the health worker and try to do what he says. Ask questions about anything that is not clear. After you have given ORS solution for a few minutes, tell the health worker that Manal just vomited the solution.

OBSERVERS:
Look at Plan B and observe the role play. Notice what the health worker explains well and what could be done better.

The facilitator will start the role play and then stop it after a few minutes for a discussion of Plan B.

THE SITUATION 4 HOURS LATER:

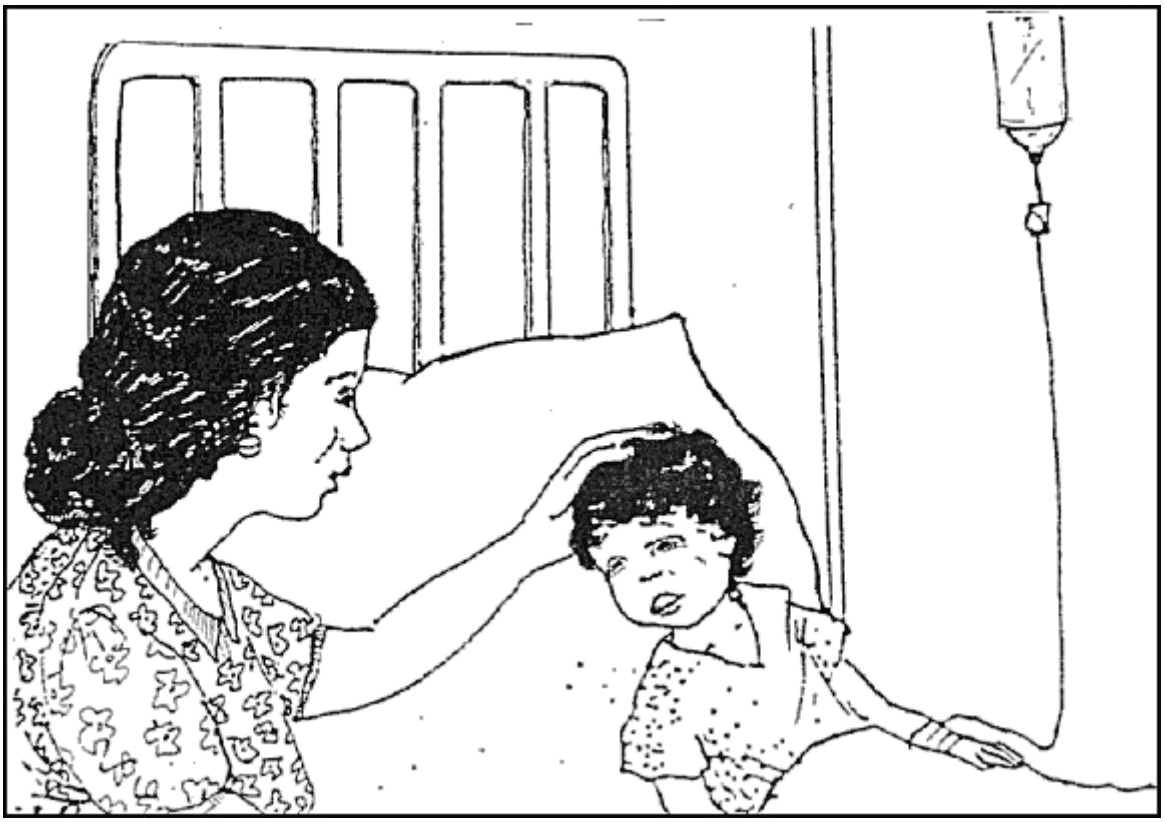
After 4 hours, the health worker reassessed Manal. She had NO DEHYDRATION. diarrhoea continued, but the health worker thought that she was ready to go home on Plan A.

HEALTH WORKER:
Teach the mother Plan A. Give her ORS packets to take home. Ask her checking questions to be sure she remembers and understands the 3 Rules of Home Treatment.

Check that she knows how to give the zinc syrup.

6.3 PLAN C: TREAT SEVERE DEHYDRATION QUICKLY

Severely dehydrated children 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 children who have SEVERE DEHYDRATION.

The treatment of the severely dehydrated child depends on:

* the type of equipment available in your clinic
  or in a nearby clinic or hospital,

* the training you have received, and

* whether the child can drink or not.

To learn how to treat a severely dehydrated child according to Plan C at your clinic, you will read and study an Annex that matches your situation.

1. **Annex C-1** teaches you how to treat according to Plan C if:

    * your clinic has IV equipment and acceptable fluids[10], and
    * you have been trained to give IV fluid.

2. **Annex C-2** teaches you how to treat according to Plan C if:

    * you cannot give IV fluid at your clinic, and
    * IV treatment is available at another clinic or hospital that can be reached within 30 minutes.

3. **Annex C-3** teaches you how to treat according to Plan C if:

    * you cannot give IV fluid at your clinic,
    * there is no clinic or hospital offering IV treatment nearby,
    * your clinic has nasogastric equipment, and
    * you are trained to use a nasogastric (NG) tube.

4. **Annex C-4** teaches you how to treat according to Plan C if:

    * you cannot give IV fluid at your clinic,
    * there is no clinic or hospital offering IV treatment nearby,
    * you cannot give NG therapy, and
    * the child can drink.

If you cannot give IV or NG fluid and the child cannot drink, refer the child urgently to the nearest clinic or hospital, which can give IV or NG treatment.

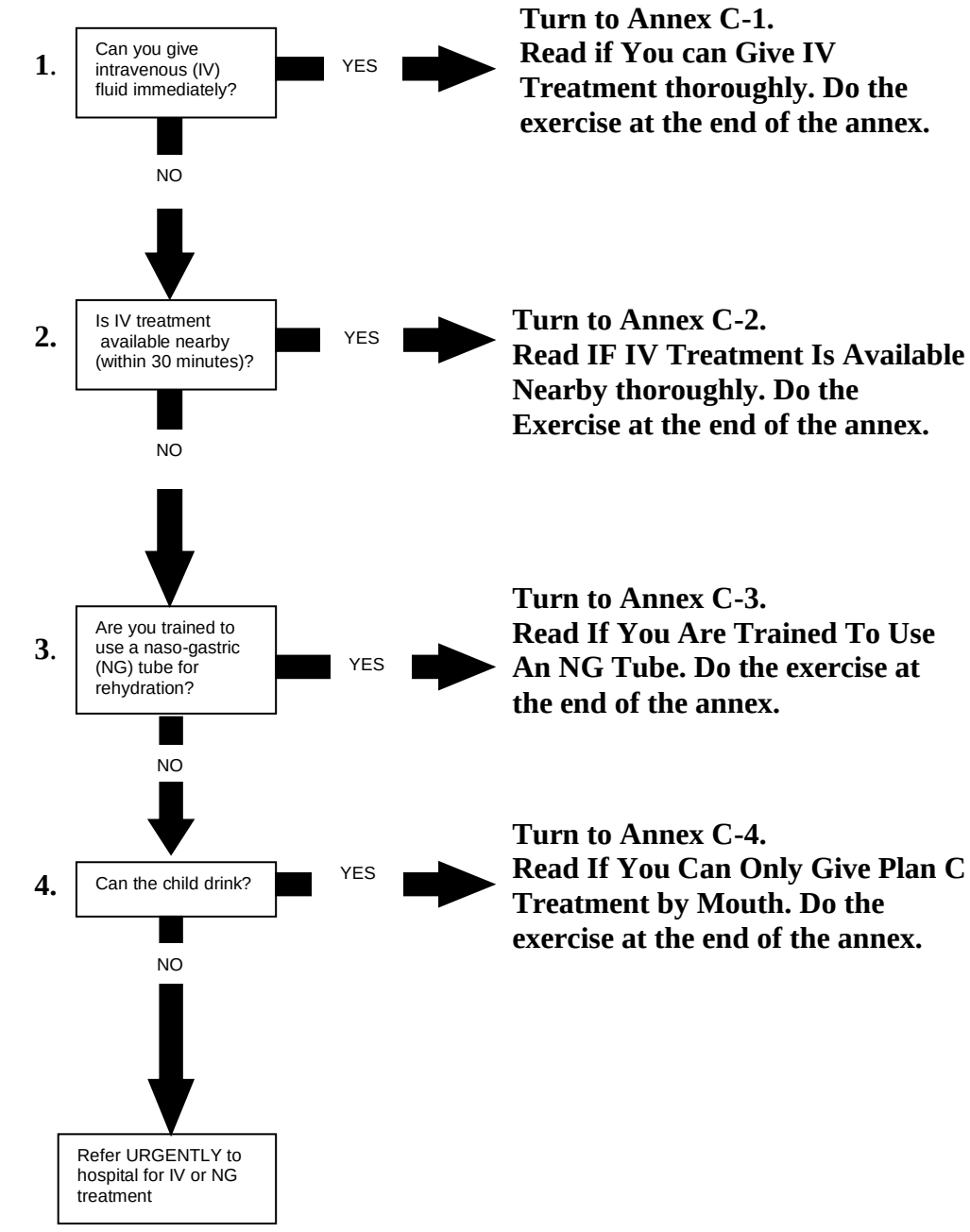
[10] See Annex D for acceptable IV fluids.

To determine how you will treat a child who needs Plan C treatment, refer to the flowchart below. Read the questions in order from top to bottom and answer for the situation at your clinic. Note the first time you answer YES. Turn to the appropriate C Annex (as indicated on the flowchart) and continue reading.

➢ *Plan C: Treat Severe Dehydration Quickly*

To determine the appropriate PLAN C Treatment, read the question. If the answer is "YES", go across. If "NO" go down.

START HERE



TREAT PERSISTENT DIARRHOEA

The treatment for PERSISTENT DIARRHOEA requires special feeding.

The mother of a child with PERSISTENT DIARRHOEA will be advised on feeding her child. The feeding recommendations for a child with persistent diarrhoea are on COUNSEL THE MOTHER chart. They are explained in the module Counsel the Mother. It is important to give the child zinc syrup for 10-14 days.

6.5Give zink

Give **ALL** children with diarrhoea oral Zinc for 10-14 days in the dose appropriate to their age & tell the mother that zinc will prevent children for the next 3 months.

6.6 TREAT DYSENTERY

Give an oral antibiotic recommended for Shigella in your area to treat DYSENTERY. Tell the mother to return in 2 days for follow-up care to be sure the child is improving. Also give zinc syrup for 10-14 days.

6.7 TREAT CHOLERA

Children who are two years or older with severe dehydration who live in an area where cholera is present, should be given an appropriate antibiotic. Treatment of cholera with an appropriate antibiotic helps to shorten the duration of diarrhoea and the period during which vibrio cholera is excreted.

The box "Give an Appropriate Oral Antibiotic" on the TREAT THE CHILD chart tells the recommended antibiotics. How to give the antibiotic is described in this module in section 1.0 - Teach the Mother to Give Oral Drugs at Home.

7.0 IMMUNIZE EVERY SICK CHILD, AS NEEDED

This module assumes that you have already been trained to give immunizations. You can receive more detailed descriptions of how to give immunizations from the Expanded Programme on Immunizations, World Health Organization. The course, *Immunization in Practice: A Guide for Health Workers Who Give Vaccines*, trains health workers to give immunizations.

If you immunize children with the appropriate vaccine at the appropriate time, you prevent measles, polio, diphtheria, pertussis, tetanus, tuberculosis, hepatitis B & Haemophilus influenzae B syndrome (meningitis, pneumonia, and septicemia). Check the immunization status of every child you treat at your clinic. Immunize, as needed.

Review the following points about preparing and giving immunizations:

* If a child is well enough to go home, give him, arrange later or guide to service for any immunizations he needs before he leaves the clinic.

* Use a sterile needle and a sterile syringe for each injection. This prevents transmission of HIV and the Hepatitis B virus.

* If only one child in the clinic needs an immunization, open a vial of the vaccine and give him the needed immunization.

* Discard opened vials of BCG and measles vaccines at the end of each immunization session. You me keep opened vials of OPV vaccine if:

  - they are fitted with rubber stoppers,
  - the expiry date has not been passed, ***and***
  - the vaccines are clearly labeled and stored under proper cold chain conditions.

  OPV vials may be used in later immunization sessions until the vial is empty.

* Do ***not*** give OPV 0 to an infant who is more than 14 days old.

* Record all immunizations on the child's immunization card. Record the date you give each dose. Also keep a record of the child's immunizations in the immunization register or the child's chart, depending on what you use at your clinic.

* If a child has diarrhoea and needs OPV, give it to the child. Do **not** record the dose on the immunization record. Tell the mother to return in 4 weeks for an extra dose of OPV.

  When the child returns to repeat the dose, consider it to be the one that was due at the time of the diarrhoea. Record the date when the repeated dose is given on the immunization card and in your clinic's immunization register.

Tell the mother which immunizations her child needs today. Tell her about the possible side effects. Below is a brief description of side effects of each vaccine.

* **BCG**: A small red tender swelling then an ulcer appears at the place of the immunization after about 2 weeks. The ulcer heals gradually and leaves a small scar.

  Tell the mother a small ulcer will occur and to leave the ulcer uncovered. If necessary, cover it with a dry dressing only.

* **OPV**: No side effects.

* **Pentavalent:** redness, pain and swelling at the site of injection and mild fever may occur.

* **Measles**: Fever and a mild measles rash are possible side effects of the measles vaccine. A week after you give the vaccine, a child may have a fever for 1 - 3 days. Fever means that the vaccine is working.

  Tell the mother to give paracetamole if fever is high.

EXERCISE K

In this exercise you will review checking the immunization status of several children. Answer the questions in the space provided.

1. Huwida is 6 months old. She is brought to the clinic by her grandmother. The health worker classifies her as PNEUMONIA, MALARIA and NO ANAEMIA A. Her immunization card shows that it is time to give Hawida a dose of Penta 1 ,OPV 1.
   Should Huwida be given the immunizations today? (Immunization is available in the clinic today)

2. A 15-days-old infant is brought to the clinic. Health worker Kamal finds that the infant did not receive OPV 0 at birth. Should Kamal give the infant OPV 0 today?

3. A mother brings her 5-month-old daughter, Rasha, to the clinic because she has diarrhoea with blood in the stool. The health worker classifies Rasha as NO DEHYDRATION, DYSENTERY and NO ANAEMIA AND NOT VERY LOW WEIGHT. Rasha's immunization card shows she had OPV 2 and Penta 2 five weeks ago.

   a. Should the health worker give Rasha OPV 3, Penta 3 today? (immunization is available in the clinic today)

   The mother says that she does not want Rasha to be immunized again. She tells the health worker that Rasha had a fever and was irritable after the last time.

b. What should the health worker tell the mother about possible side effects of OPV and Penta vaccines?

The mother agrees to let Rasha be immunized. The health worker gives Rasha the immunizations.

c. How should the health worker record the immunizations?

When you finish this exercise, discuss your answers with a facilitator.

ANNEXES

ANNEX A

NASOGASTRIC REHYDRATION

Use a clean rubber or plastic nasogastric (NG) tube. Use a tube that is 2.0 mm - 2.7 mm in diameter for a child, or 4.0 mm - 6.9mm for an adult.

Place the patient on his or her back, with the head slightly raised. Older children and adults may prefer to sit up.

Measure the length of tube to be swallowed by placing the tip just above the navel. Then stretch the tubing over the back of the ear and forward to the tip of the nose. Mark the tube with a piece of tape where it touches the end of the nose. This mark shows the length of tubing needed to reach from the tip of the nose to the stomach.

Moisten the tube with a water-soluble lubricant or plain water; do not use oil.

Pass the tube through the nostril with the largest opening. Gently advance it until the tip is in the back of the throat. Each time the patient swallows, advance the tube another 3.5cm. If the patient is awake, ask him or her to drink a little water.

If the patient chokes, coughs repeatedly or has trouble breathing, the tube has probably passed into the trachea. Pull it back 2cm - 4cm until the coughing stops and the patient is comfortable. Wait a minute, and then try to insert the tube again.

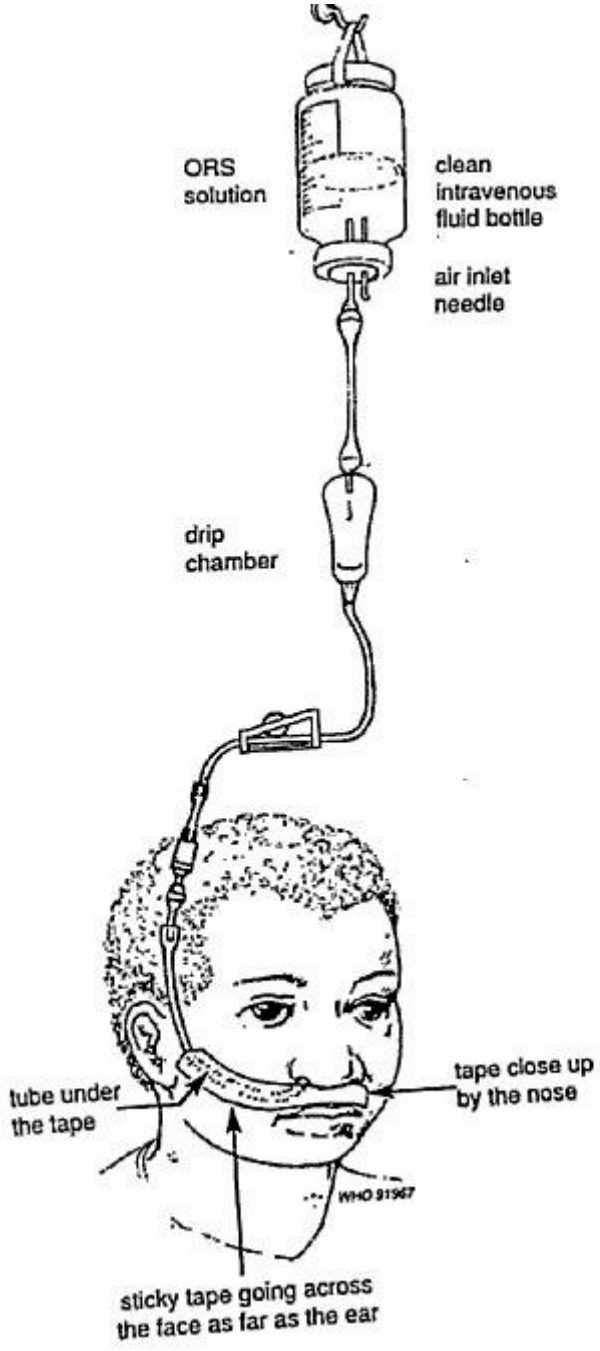
Advance the tube each time the patient swallows until the tape marker reaches the nose. If the patient is comfortable and not coughing, the tube should be in the stomach.

Look into the patient's mouth to be certain that the tube is not coiled in the back of the throat. Confirm that the tube is in the stomach by attaching a syringe and withdrawing a little stomach fluid. You could also do this by placing a stethoscope just above the navel. Inject air into the tube with an empty syringe. Listen for the air entering the stomach.

Fasten the tube to the face with tape and attach IV tubing that is connected to a clean IV bottle containing ORS solution. Regulate the infusion to a rate of 20 ml/kg per hour, or less.

If an IV bottle is not available, a syringe (with the barrel removed) can be attached to the tube and used as a funnel. Hold the syringe above the patient's head and pour ORS solution into it at regular intervals.

TECHNIQUE FOR NASOGASTRIC REHYDRATION



Source: King, M.et al. Primary child care: a manual for health workers. Book One. Oxford University Press, 1978

ANNEX B

ORT CORNER

An ORT corner is an area in a health facility available for oral rehydration therapy (ORT). This area is needed because mothers and their children who need ORS solution will have to stay at the clinic for several hours.

When there are no diarrhoea patients using the ORT corner, the area can be used for treating other problems. Then the space is not wasted. When there are dehydrated patients, this conveniently located and adequately equipped ORT corner will help the staff to manage the patients easily.

The ORT corner should be:

* Located in an area where staff frequently pass by but not in a passageway. The staff can observe the child's progress and encourage the mother.
* Near a water source
* Near a toilet and washing facilities
* Pleasant and well-ventilated

The ORT corner should have the following furniture.

* Table for mixing ORS solution and holding supplies
* Shelves to hold supplies
* Bench or chairs with a back where the mother can sit comfortably while holding the child
* Small table where the mother can conveniently rest the cup of ORS solution

The ORT corner should have the following supplies. These supplies are for a clinic that receives 25-30 diarrhoea cases in a week.

* ORS packets (a supply of at least 300 packets per month)

* 6 bottles that will hold the correct amount of water for mixing the ORS packet, including some containers like those that mother will have
at home

* 6 cups

* 6 spoons

* 2 droppers (may be easier to use than spoons for small infants)

* cards or pamphlets (such as a Mother's Card) that remind mothers how to care for a child with diarrhoea. A card is given to each mother to take home.

* Soap (for hand washing)

* Wastebasket

* Food available (so that children may be offered food or eat at regular meal times)

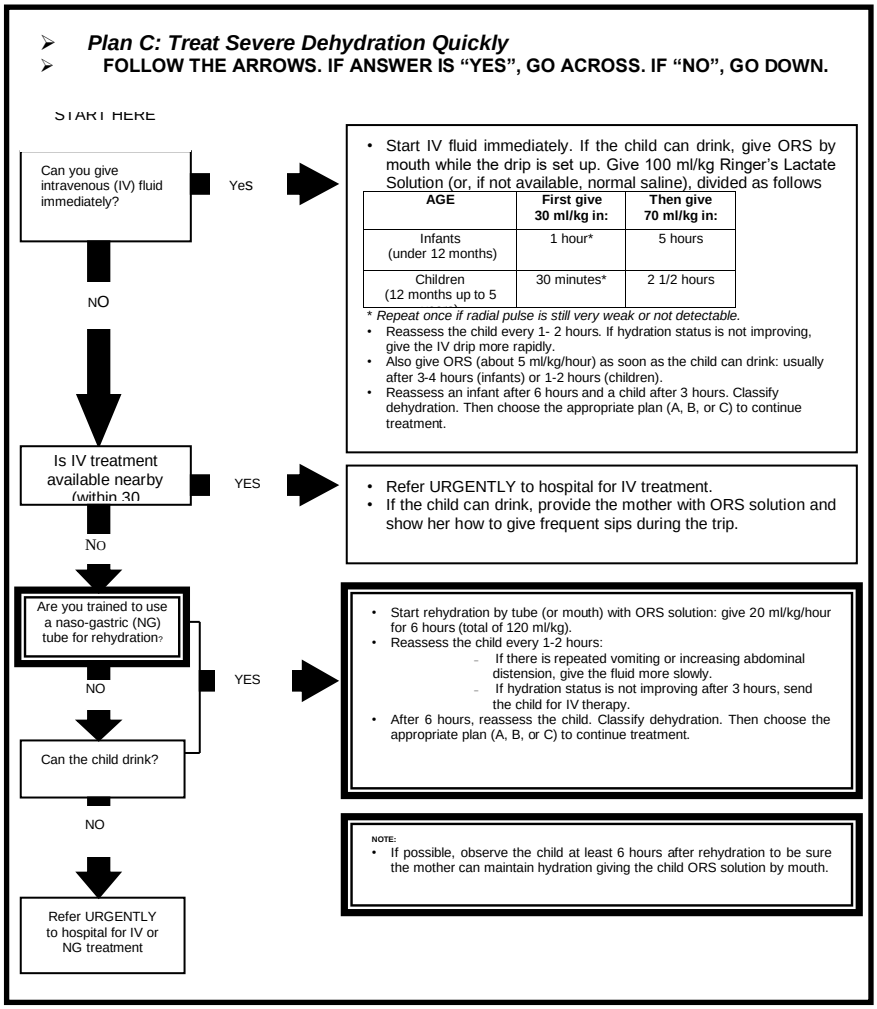
The ORT corner is a good place to display informative posters. Since mothers sit in the ORT corner for a long time, they will have a good opportunity to learn about health prevention from the posters.

Mothers are interested in posters about the treatment and prevention of diarrhoea and dehydration. The posters should contain information about ORT, use of clean water, breastfeeding, weaning foods, hand washing, the use of latrines, and when to take the child to the clinic. Other health messages should include information on immunizations.

Posters alone are not adequate for informing mothers. Health workers should also counsel mothers in person, using a Mother's Card if there is one available.

ANNEX C-1

IF YOU CAN GIVE INTRAVENOUS (IV) TREATMENT



If you can give IV treatment and you have acceptable solutions such as Ringer's Lactate or Normal Saline at your clinic, give the solution intravenously to the severely dehydrated child.[11]

The sections of Plan C below describe the steps to rehydrate a child intravenously. It includes the amounts of IV fluid that should be given according to the age and weight of the child. Study the sections carefully.

• Start IV fluid immediately. If the child can drink, give ORS by mouth while the drip is set up. Give 100 ml/kg Ringer's Lactate Solution (or, if not available, normal saline), divided as follows:

AGE	First give 30 ml/kg in:	Then give 70 ml/kg in:
Infants (under 12 months)	1 hour*	5 hours
Children (12 months up to 5 years)	30 minutes*	2 1/2 hours

** Repeat once if radial pulse is still very weak or not detectable.*

• Reassess the child every 1- 2 hours. If hydration status is not improving, give the IV drip more rapidly.
• Also give ORS (about 5 ml/kg/hour) as soon as the child can drink: usually after 3-4 hours (infants) or 1-2 hours (children).

NOTE:
• If possible, observe the child at least 6 hours after rehydration to be sure the mother can maintain hydration giving the child ORS solution by mouth.

[11] This annex will not teach how to give intravenous treatment. Annex D includes a brief review of how to give IV fluids, solutions to use and the rate at which IV fluids should be given.

Some of the terms in this part of Plan C may be new to you. Read the following to understand how the terms are used in Plan C.

* The DRIP refers to the IV equipment and solution.

* The "rate of the drip" refers to the number of drops per minute that the IV fluid is given.

* "While the drip is set up" means during the time you are preparing the IV equipment, IV fluid and you are putting the IV needle into the child's vein.

* HYDRATION STATUS refers to whether the child is normally hydrated or dehydrated and the extent of dehydration. A child classified as NO DEHYDRATION has not lost enough fluid to show signs of dehydration. A child classified as SOME DEHYDRATION or SEVERE DEHYDRATION has less than a normal amount of fluid in the body.

  To assess a child's hydration status, refer to the signs on the ASSESS & CLASSIFY chart.

* The RADIAL PULSE refers to the pulse felt over the radial artery. The radial artery is the main blood vessel at the wrist on the side of the thumb.

Provide IV Treatment for Severe Dehydration

When you provide IV therapy for SEVERE DEHYDRATION, you give the child a large quantity of fluids quickly. The fluids replace the body's very large fluid loss.

Begin IV treatment quickly in the amount specified in Plan C. If the child can drink, give ORS by mouth until the drip is running. Then give the first portion of the IV fluid (30 ml/kg) very rapidly (within 60 minutes for infants, within 30 minutes for children). This will restore the blood volume and prevent death from shock. Then give 70 ml/kg more slowly to complete rehydration.

During the IV treatment, assess the child every 1 - 2 hours. Determine if the child is receiving an adequate amount of IV fluid.

EXAMPLE

The following example describes how to treat a child with SEVERE DEHYDRATION if you can give IV treatment.

A 6-month-old (9 kg) girl, Siham, was classified as SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. She was not able to drink but had no other disease classifications. IV treatment was available in the clinic. Therefore, the health worker decided to treat the infant with IV fluid according to Plan C.

The health worker gave Siham 270 ml (30 ml x 9 kg) of Ringer's Lactate by IV during the first hour. Over the following five hours, he gave her 630 ml of IV fluid (70 ml x 9 kg), approximately 125 ml per hour. The health worker assessed the infant's hydration status every 1-2 hours (that is, he assessed for dehydration). Her hydration status was improving, so the health worker continued giving Siham the fluid at a steady rate.

After 4 hours of IV treatment, Siham was able to drink. The health worker continued giving her IV fluid and began giving her approximately 45 ml of ORS solution to drink per hour.

After Siham had been on IV fluid for 6 hours, the health worker reassessed her dehydration. She had improved and was reclassified as SOME DEHYDRATION. The health worker chose Plan B to continue treatment. The health worker stopped the IV fluid. He began giving Siham ORS solution as indicated on Plan B.

Monitor Amount of IV Fluid and the Child's Hydration Status

When rehydrating a child who has SEVERE DEHYDRATION, you have to monitor the amount of IV fluid that you give. You may use a form, similar to the following sample form.

Time (hr)	Volume (ml) Set-up*		Estimated Volume (ml) Remaining	Volume (ml) Received
_____	_____			
_____	_____		_____	_____
_____	_____		_____	_____
_____	_____		_____	_____
_____	_____		_____	_____
_____	_____		_____	_____
_____			_____	_____

* For each new bottle/pack, initial or added

The form has 4 columns to record the amount of fluids given to a patient over a period of time.

1. **Time:** Record the times that you will check the IV fluid.

   For an Infant:
   (under 12 months)
   * After the first hour
   * Every hour over the next 5 hours

   For a Child:
   (12 months up to 5 years)
   * After the first half hour (30 minutes)
   * Every hour over the next 2.5 hours

2. **Volume Set-up:** As you start the IV fluid, record the amount of fluid in the bottle or pack. The amount should be listed on the container. Each time you replace the IV fluid with another container be sure to record the amount on the appropriate line on the form at the time of replacement.

3. **Estimated Volume Remaining:** Check the IV fluid remaining in the container at the times listed. The remaining volume cannot be read precisely. Estimate it to the nearest 10-ml (for example - 220 ml, 230 ml, 240 ml, etc.). Record the estimated amount on the form.

4. **Volume Received:** Calculate the amount of IV fluid received by the child at the times listed. To calculate, subtract the "Volume remaining" amount from the "Volume set-up" amount. The answer is the amount of IV fluid the child has received up to the time you are checking. Record that amount on the form.

It is helpful to mark the IV fluid container with a pen or tape to show the level that should be reached at a certain time. For example, mark the desired level to reach after the first 30 or 60 minutes, each hour, or at the end of 3 or 6 hours. This will help you adjust the rate of the drip correctly. Regulate the number of drops per minute to give the correct amount of fluid per hour.

The sample form below shows the amounts of IV fluid given to a 16-month-old (10 kg) child who is classified as having SEVERE DEHYDRATION. The health worker followed Plan C. He gave the child 300 ml (30 ml ×10 kg) in the first 30 minutes. He gave 700 ml (70 ml × 10 kg) over the next 2.5 hours (about 300 ml per hour).

Sample Fluid Form

Time (hr)	Volume (ml) Set-up*		Estimated Volume (ml) Remaining	Volume Received
12:00 pm	1000 ml			
12:30 pm	_____		700 ml	300 ml
1:30 pm	_____		400 ml	600 ml
2:30 pm	_____		100 ml	900 ml
3:00 pm	_____		0 ml	1000 ml
_____	_____		_____	_____
_____			_____	_____

* For each new bottle/pack, initial or added

Make sure the IV fluid is given correctly and in adequate amounts. To monitor whether the fluid rate is adequate, reassess the child's dehydration every 1-2 hours. If the signs of dehydration and the diarrhoea are worse or not improved, increase both the rate you give the fluid and the amount of fluid that you give. Also increase the fluid rate if the child is vomiting. If the signs are improving, continue giving IV fluid at the same rate.

While giving IV fluid, remember to also give small sips of ORS solution to the child as soon as he can drink. Give the child approximately 5 ml of ORS solution per kilogram of body weight per hour.

Reassess Dehydration and Choose the Appropriate Treatment Plan

Assess the signs of dehydration in an infant after 6 hours and a child after 3 hours. Classify dehydration. Select the appropriate treatment plan (Plan A, B or C) to continue treatment.

After a child has been fully rehydrated and is classified as NO DEHYDRATION, keep the child at the clinic for 6 more hours if possible. During this time, the mother should give extra fluid according to Plan A. Watch to be sure that the mother can give enough fluid to fully replace all fluid lost while the diarrhoea continues. The child should also be fed. Check the child periodically to make sure that signs of dehydration do not return.

EXERCISE: ANNEX C-1

1. Yahia is 2 years old, weighs 8 kg. He has diarrhoea. A health worker determines that Yahia is lethargic, but able to drink. His eyes are sunken, and a skin pinch goes back very slowly. The health worker classifies Yahia as diarrhoea with SEVERE DEHYDRATION. He has a fever of 38.5°C. The health worker also classifies him as VERY SEVERE FEBRILE DISEASE. He has ANAEMIA OR VERY LOW WEIGHT.

   The health worker can give IV fluid for Plan C. Should Yahia be urgently referred to a hospital? Why or why not?

2. Khamis is 8 months old and weighs 6 kg. He is no longer breastfed. His mother brings him to a clinic because he has had diarrhoea for a week. The mother tells the health worker that there has been no blood in Khamis's stools. The health worker sees that Khamis's eyes are sunken. When encouraged, Khamis is able to take a sip of water, but drinks poorly. A skin pinch goes back very slowly. The health worker, who can give IV treatment, finds Khamis has diarrhoea with SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT.

   a. How much IV fluid should be given to Khamis in the first hour? How much over the next 5 hours?

   b. Should the health worker give Khamis ORS solution?
      If so, how much?

c. Khamis started receiving IV treatment at 1:00 pm from a 1000-ml bottle of IV fluid. The health worker checked Khamis every hour. She recorded the amounts remaining in the bottle. See the fluid form. Calculate the amounts of IV fluid that Khamis received and record them on the form.

Time (hr)	Volume (ml) Set-up*		Estimated Volume (ml) Remaining	Volume Received
1:00 pm	1000 ml			
2:00 pm	_____		820 ml	_____
3:00 pm	_____		730 ml	_____
4:00 pm	_____		640 ml	_____
5:00 pm	_____		550 ml	_____
6:00 pm	_____		470 ml	_____
7:00 pm			400 ml	_____

* For each new bottle/pack, initial or added

d. At 7:00 pm, the health worker reassesses Khamis for dehydration. He had slept some. He is now awake, alert and drinking well though he does not seem thirsty. His eyes are sunken. The health worker pinched his skin and the pinch goes back immediately. How should the health worker classify Khamis's dehydration?

What plan should be followed to continue treating Khamis?

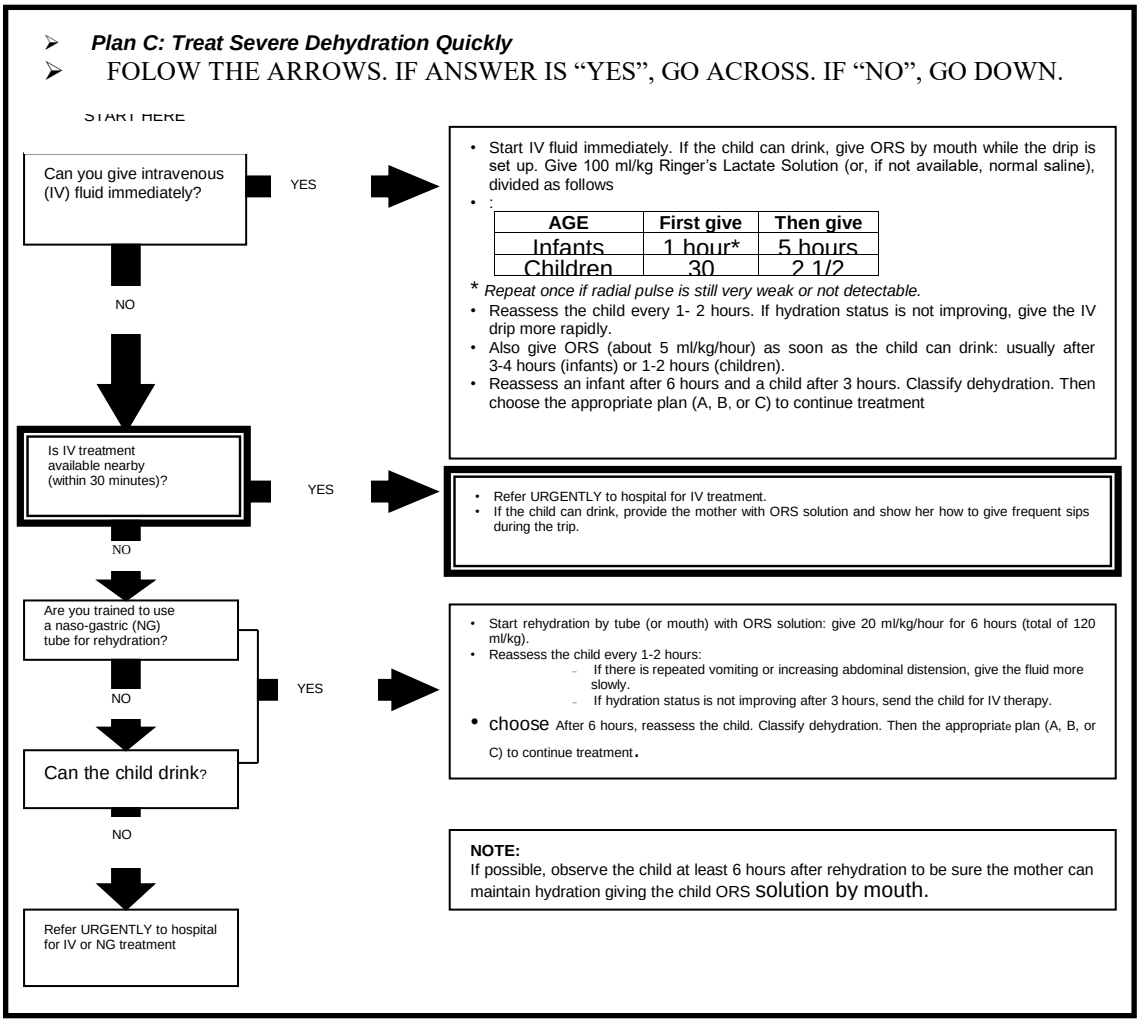
Is Khamis ready to go home? Why or why not?

Ask a facilitator to check your answers. Then turn back to section 6.4 - Treat Persistent Diarrhoea and continue reading.

ANNEX C-2

IF IV TREATMENT IS AVAILABLE NEARBY

You are not able to provide IV treatment at your clinic. However, IV treatment is available at a clinic or hospital nearby (within 30 minutes).
Read the Plan C section below that describes this situation.



• Refer URGENTLY to hospital for IV treatment.
• If the child can drink, provide the mother with ORS solution and show her how to give frequent sips during the trip.

Refer the severely dehydrated child immediately to the nearby facility. If the child can drink, show the mother how to give sips of ORS solution to the child. She should encourage her child to drink on the way to the facility.

EXERCISE: ANNEX C-2

1. Gabriel is 1 year old and weighs 10 kg. His mother brings him to a clinic because he has diarrhoea.

   The health worker determines that Gabriel has none of the general danger sign. She then finds that Gabriel is able to take small sips of ORS when encouraged, but is too tired and weak to drink well. Gabriel's eyes are sunken and a skin pinch goes back very slowly. The health worker finds Gabriel has SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. The health worker decides that Gabriel needs Plan C. The clinic does not have IV equipment. There is a hospital 15 minutes away where IV treatment is available.

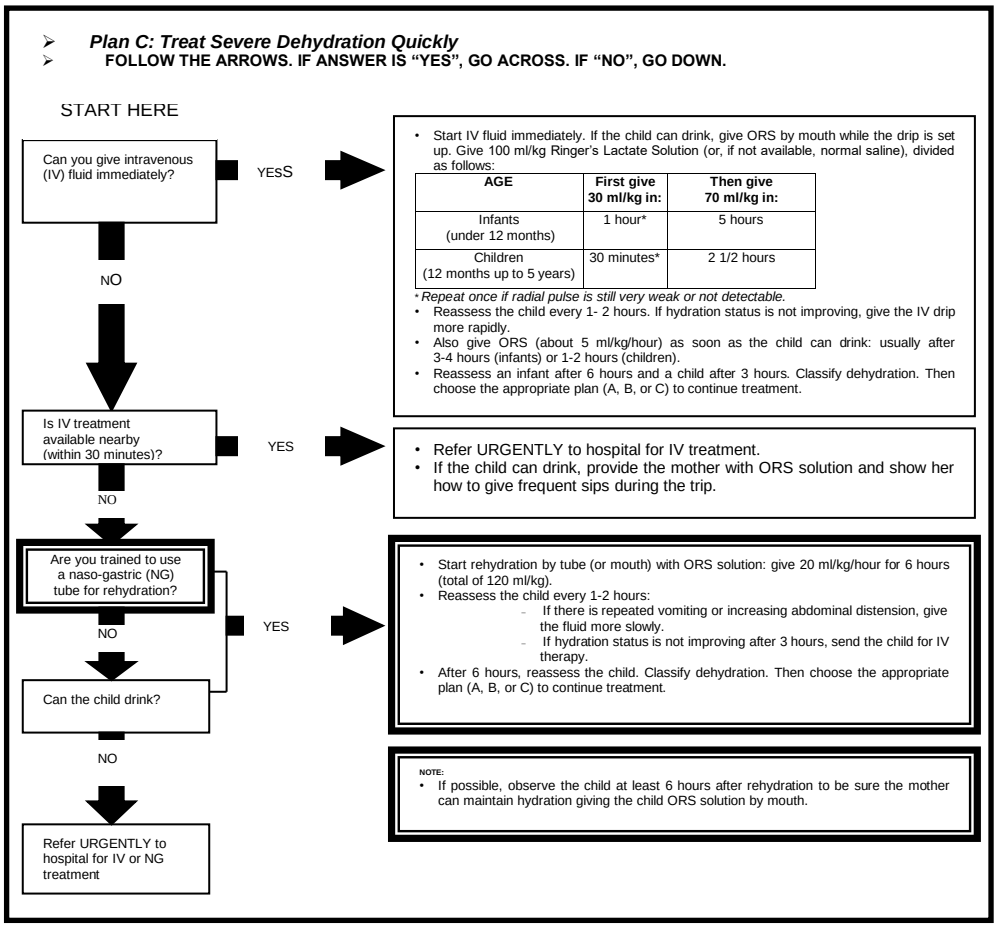
   a. How should the health worker treat Gabriel?

   b. What advice should the health worker give to his mother?

Ask a facilitator to check your answers. Then turn back
to section 6.4 - Treat Persistent Diarrhoea and continue reading.

ANNEX C-3

IF YOU ARE TRAINED TO USE A NASOGASTRIC (NG) TUBE



You cannot give IV treatment at your clinic and there is no nearby clinic or hospital offering IV treatment. If you are trained to use an NG tube[12], rehydrate the child by giving ORS solution with an NG tube.[13]

- Start rehydration by tube (or mouth) with ORS solution: give 20 ml/kg/hour for 6 hours (total of 120 ml/kg).
- Reassess the child every 1-2 hours:
  - If there is repeated vomiting or increasing abdominal distension, give the fluid more slowly.
  - If hydration status is not improving after 3 hours, send the child for IV therapy.
- After 6 hours, reassess the child. Classify dehydration. Then choose the appropriate plan (A, B, or C) to continue treatment.

NOTE:
- If possible, observe the child at least 6 hours after rehydration to be sure the mother can maintain hydration giving the child ORS solution by mouth.

[12] This annex will not teach you now to use an NG tube to give fluids. Annex A includes a brief review of nasogastric tube placement and rehydration for those who have previously been trained.

[13] According to Plan C, the same steps are followed to rehydrate a child by NG tube as by mouth.

Some of the terms in this part of Plan C may be new to you. The following explanations will help you understand them.

* ABDOMINAL DISTENSION means the abdomen has increased in size. The skin is stretched.

* HYDRATION STATUS refers to whether the child is normally hydrated or dehydrated and the extent of dehydration. A child classified as NO DEHYDRATION has not lost enough fluid to show signs of dehydration. A child classified as SOME DEHYDRATION or SEVERE DEHYDRATION has less than a normal amount of fluid in the body.

  To assess a child's hydration status, refer to the signs on the ASSESS & CLASSIFY chart.

EXAMPLE

The following example describes how to treat a severely dehydrated child if you can give ORS solution by NG tube.

> A 4-year-old (10 kg) boy, Ferdrick, was brought to a clinic with diarrhoea. The clinic did not offer IV treatment and no clinic nearby had IV treatment. NG treatment was available. Ferdrick was not able to drink. He had no other signs of disease. He was classified as diarrhoea with SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT.
>
> Following Plan C, the health worker decided to give ORS solution to Ferdrick by NG tube. The health worker gave him 200 ml (20 ml × 10 kg) over the next hour. The health worker checked Ferdrick every hour to make sure that he received 200 ml of ORS per hour. She also checked to make sure that the boy was not vomiting and that he did not have abdominal distension.
>
> After 6 hours, Ferdrick had received 1200 ml of ORS solution by NG tube.

Monitor the Amount of NG Fluid and the Child's Hydration Status

When rehydrating a child who has SEVERE DEHYDRATION, you have to monitor the amount of NG fluid that you give over the 6-hour period. You may use the fluid form for follow up.form

The form has 4 columns to record the amount of NG fluid given.

1. **Time:** Record the times that you will check the NG fluid. You will want to monitor the fluid every hour for 6 hours.

2. **Volume set-up:** When you begin to give NG fluids, record the amount of fluid in the container. Each time you replace the NG fluid container, record the amount on the appropriate line on the form at the time of replacement.

3. **Estimated Volume Remaining:** Check the IV fluid remaining in the container at the times listed. The remaining volume cannot be read precisely. Estimate it to the nearest 10-ml (for example - 220 ml, 230 ml, 240 ml, etc). Record the estimated amount on the form.

4. **Volume received:** Calculate the amount of NG fluid received by the child at the times listed. To calculate, subtract the "Volume remaining" amount from the "Volume set-up" amount. The answer is the amount of NG fluid the child has received up to the time you are checking. Record that amount on the form.

It is helpful to mark the container with a pen or tape to show the level that should be reached at a certain time. For example, mark the desired level to reach after the first 30 or 60 minutes, each hour, or at the end of 3 or 6 hours. This will help you adjust the rate of the drip correctly. Regulate the number of drops per minute to give the correct amount of fluid per hour.

EXAMPLE

The sample form below shows the amounts of NG fluid that Ferdrick received during the
6 hours he was treated at the clinic. The health worker gave him 200 ml of ORS solution by NG tube (that is, 20 ml ×10 kg) beginning at 11:00 am.

Sample Fluid Form

Time (hr)	Volume (ml) Set-up*		Estimated Volume (ml) Remaining	Volume Received
11:00 am	1000 ml			
12:00 pm	---		800 ml	200 ml
1:00 pm	---		600 ml	400 ml
2:00 pm	---		400 ml	600 ml
3:00 pm	---		200 ml	800 ml
4:00 pm	1000 ml		0 ml	1000 ml
5:00 pm			800 ml	1200 ml

* For each new bottle/pack, initial or added

Reassess the child every 1-2 hours:

* If the child is vomiting repeatedly or has increased abdominal distension, give the NG fluid more slowly.

* If the child's dehydration is ***not*** improving after 3 hours, refer the child for IV treatment.

* If the child is improving, continue to give the NG fluid for a total of 6 hours.

Reassess Dehydration and Choose the Appropriate Treatment Plan

After 6 hours of NG fluid, reassess the child for dehydration. Classify dehydration. Select the appropriate treatment plan (Plan A, B or C) to continue treatment.

After a child has been fully rehydrated and is classified as NO DEHYDRATION, keep the child at the clinic for 6 more hours if possible. During this time, the mother should give extra fluid according to Plan A. Watch to be sure that the mother can give enough fluid to fully replace all fluid lost while the diarrhoea continues. The child should also be fed. Check the child periodically to make sure that signs of dehydration do not return.

EXERCISE: ANNEX C-3

1. Francis, an 18-month-old (8 kg) boy, is brought to the clinic with diarrhoea. The health worker does a complete assessment of the boy. Francis is alert and the health worker finds that he can drink, but very poorly. A skin pinch goes back very slowly. The health worker classifies the child as diarrhoea with SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. The child needs fluid for SEVERE DEHYDRATION given according to Plan C. The nearest hospital offering IV treatment is 2 hours away. The health worker is trained to give nasogastric therapy.

   a. How should Francis be rehydrated?

   b. How much ORS solution should Francis be given per hour?

   c. After 1 hour, Francis is vomiting repeatedly. What should the health worker do?

   d. After 3 hours, Francis's signs of dehydration have not improved. Now what should the health worker do?

2. Sharifa is 9 months old and weighs 7 kg. Her mother brings her to the clinic because she has had diarrhoea for a week.

The mother tells the health worker that Sharifa is no longer breastfed, and is too tired to drink from a cup. The health worker assesses Sharifa. He finds that she is lethargic, has sunken eyes, and a skin pinch goes back very slowly. The health worker classifies Sharifa as diarrhoea with SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT.

The health worker decides to rehydrate Sharifa by NG tube according to Plan C. At 9:00 am, the health worker sets up 1000 ml of ORS solution.

a. How much NG fluid per hour should the health worker give Sharifa?

b. For how long should the health worker give Sharifa NG therapy?

c. Fill out the sample form below as if you were setting up the NG fluid for Sharifa.

Time (hr)	Volume (ml) Set-up*		Estimated Volume (ml) Remaining	Volume (ml) Received
_____	_____			
_____	_____		_____	_____
_____	_____		_____	_____
_____	_____		_____	_____
_____	_____		_____	_____
_____	_____		_____	_____
_____			_____	_____

* For each new bottle/pack, initial or added

d. At 10:00, the health worker checks the fluid pack. There is 860 ml of fluid remaining. Record it on the form and calculate the volume received.

e. Every 1-2 hours the health worker monitors Sharifa. What should the health worker look for?

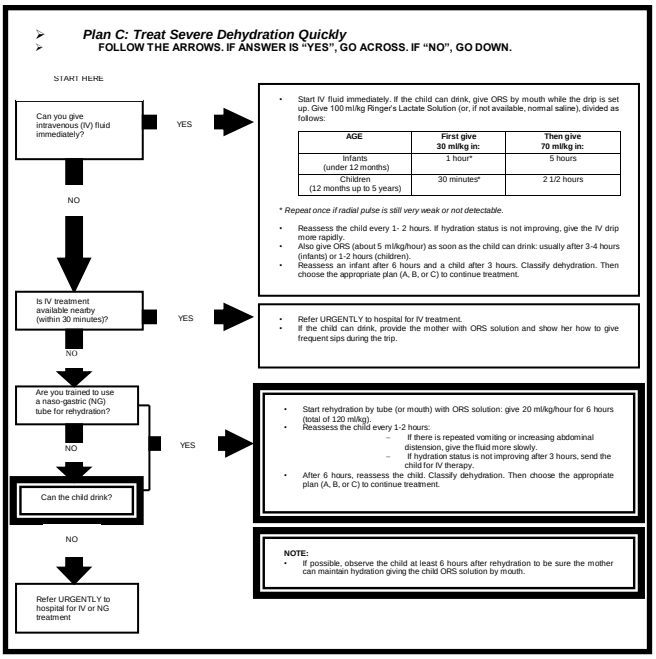
f. After 3 hours on NG fluid, Sharifa is improving. The health worker continues NG treatment. After 6 hours, the health worker reassesses Sharifa and finds her alert, her eyes are no longer sunken, and a skin pinch goes back immediately. When given a cup of clean water, Sharifa drinks it. How should Sharifa be classified now?

g. What should the health worker do next?

Ask a facilitator to check your answers.
Then turn back to section 6.4 - Treat Persistent Diarrhoea and continue reading.

ANNEX C-4

IF YOU CAN
ONLY GIVE PLAN C TREATMENT BY MOUTH



You cannot give IV fluids at your clinic. There is no clinic or hospital nearby that can give IV treatment. You are not able to use an NG tube for rehydration.

To learn how to give Plan C treatment by mouth, read the sections of Plan C below. Study the sections carefully.

- Start rehydration by tube (or mouth) with ORS solution: give 20 ml/kg/hour for 6 hours (total of 120 ml/kg).
- Reassess the child every 1-2 hours:
  - If there is repeated vomiting or increasing abdominal distension, give the fluid more slowly.
  - If hydration status is not improving after 3 hours, send the child for IV therapy.
- After 6 hours, reassess the child. Classify dehydration. Then choose the appropriate plan (A, B, or C) to continue treatment.

NOTE:
- If possible, observe the child at least 6 hours after rehydration to be sure the mother can maintain hydration giving the child ORS solution by mouth.

If a child with SEVERE DEHYDRATION comes to your clinic and you cannot give IV or NG treatment, find out if the child is able to drink.

- **If he is able to drink, you can try to rehydrate the child orally.**

- **If the child is not able to drink, you must refer him urgently to the nearest clinic or hospital where IV or NG treatment is available. If this child does not receive fluids, he will die.**

Some of the terms in this part of Plan C may be new to you. The following will help you understand them.

* ABDOMINAL DISTENSION means the abdomen has increased in size. The skin is stretched.

* HYDRATION STATUS refers to whether the child is normally hydrated or dehydrated and the extent of dehydration. A child classified as NO DEHYDRATION has not lost enough fluid to show signs of dehydration. A child classified as SOME DEHYDRATION or SEVERE DEHYDRATION has less than a normal amount of fluid in the body.

  To assess a child's hydration status, refer to the signs on the ASSESS & CLASSIFY chart.

Monitor the Amount of ORS

If you will rehydrate the child orally, you will have to monitor the amount of ORS solution you give him. Give 20 ml per kilogram of body weight per hour for a 6-hour period. After 6 hours, you will have given the child a total of 120 ml of ORS solution per kilogram of the child's weight.

Reassess the child's hydration status every 1-2 hours.

* If there is repeated vomiting or increasing abdominal distension, give the fluid more slowly.

* If the child's hydration status is not improving after 3 hours, refer the child for IV treatment.

EXAMPLE

Wad Nubawi Health Clinic does not give IV or NG therapy. The nearest hospital that can give IV or NG treatment is more than 2 hours away.

A 15-month-old (7 kg) girl, Hadeel, was brought to Wad Nubawi Clinic by her mother. Hadeel appeared to be sleeping but was able to take small sips of a drink when aroused. The health worker found that she had sunken eyes. A skin pinch went back very slowly. She was classified as diarrhoea with SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT.

The health worker decided to rehydrate Hadeel by mouth according to Plan C. Since Hadeel weighed 7 kg, the health worker calculated that she needed 140 ml of ORS solution per hour. The health worker showed Hadeel's mother how much ORS to give in one hour.

Each hour during the next 6 hours, the health worker checked Hadeel to make sure she was not vomiting and that her abdomen was not distended. The health worker also checked her hydration status. As Hadeel began to improve, the health worker encouraged the mother to continue rehydrating Hadeel.

Reassess Dehydration and Choose the Appropriate Treatment Plan

After 6 hours of taking ORS solution by mouth, reassess the child for dehydration. Classify dehydration. Select the appropriate treatment plan (Plan A, B or C), and continue treatment.

After the child is rehydrated, keep the child at the clinic for 6 more hours if possible. During this time, encourage the mother to give extra fluid according to Plan A. Watch to be sure that the mother can give enough fluid to fully replace all fluid lost while the diarrhoea continues. Check the child periodically to make sure that signs of dehydration do not return.

Remember:

If the child cannot drink, refer the child urgently to the nearest clinic or hospital for IV or NG treatment.
If this child does not receive fluids, he will die.

EXERCISE: ANNEX C-4

1. Josef, a 2-year-old (12 kg) child, has diarrhoea with SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. He needs IV treatment, but your clinic does not have IV or NG therapy available. The nearest hospital is 1 hour away. You are able to give Josef some sips of ORS solution.

   a. Should you refer Josef urgently or try to rehydrate him by mouth?

   b. How much ORS solution should you give?

   c. Josef vomits frequently. What should you do?

   d. After 3 hours you find Josef is lethargic, has trouble drinking as he is very tired, has sunken eyes, and a skin pinch goes back very slowly. What should you do now?

2. Eltayib, a 15-kg boy, has diarrhoea. His father brings him to a neighborhood clinic. The health worker finds Eltayib to be lethargic, a general danger sign. He also finds that Eltayib has sunken eyes and a skin pinch goes back very slowly. The health worker classifies him as having diarrhoea with SEVERE DEHYDRATION and NO ANAEMIA AND NOT VERY LOW WEIGHT. There is no IV or NG equipment at the clinic. The nearest hospital is over 2 hours away. The health worker encourages Eltayib to take some sips of ORS solution. The child drinks slowly.

   a. How much ORS should the father encourage Eltayib to drink during the next hour?

   After 3 hours, the health worker assesses Eltayib and finds him more alert and his hydration status improving. He continues to give Eltayib ORS solution for 3 more hours. Then the health worker reassesses Eltayib and reclassifies him as having SOME DEHYDRATION.

   b. What should the health worker do now?

   c. For how long should the health worker encourage Eltayib and his father to remain at the clinic? Why?

3. A grandmother brings her grandson, Hossam, to the clinic because she thinks Hossam is dying. She tells the health worker that Hossam has had diarrhoea for several days. The health worker cannot wake Hossam up. He determines that the child is unconscious. Hossam has sunken eyes and a skin pinch goes back very slowly. Hossam is classified as diarrhoea with SEVERE DEHYDRATION and NO ANAEMIA OR VERY LOW WEIGHT. The clinic has no IV or NG equipment.

   The health worker explains to the grandmother that Hossam needs fluids to stay alive. He tells her that the clinic cannot give Hossam the fluids that he needs. He explains that at the hospital there are doctors who can help Hossam, but the hospital is 2 hours away.

   What should the health worker do?

4. Ritcher, a 9-month-old child, comes to the clinic with cough and diarrhoea. He is not able to drink. He is breathing more than 55 breaths per minute, but no chest indrawing. Because of the general danger sign, he is classified as SEVERE PNEUMONIA OR VERY SEVERE DISEASE. His eyes are sunken and a skin pinch goes back very slowly. He is also classified as diarrhoea with SEVERE DEHYDRATION. He has no other disease classifications, and NO ANAEMIA AND NOT VERY LOW WEIGHT.

   How should Ritcher be treated?

Ask a facilitator to check your answers. Then turn back to section 6.4 - treat Persistent Diarrhoea and continue reading.

ANNEX D

INTRAVENOUS TREATMENT FOR SEVERE DEHYDRATION

1. Technique of Administration

The technique of administration of intravenous (IV) fluids can only be taught through practical demonstration by someone with experience. Only trained persons should give IV treatment. Several general points are:

* The needles, tubing, bottles and fluid used for IV treatment must be sterile.

* IV treatment can be given into any convenient vein. The most accessible veins are generally those in front of the elbow or on the back of the hand. In infants, the most accessible veins are on the side of the scalp.

  Use of neck veins or incision to locate a vein are usually not necessary and should be avoided if possible.

  In cases requiring rapid resuscitation, a needle may be introduced into the femoral vein[14]. The needle must be held firmly in place and removed as soon as possible.

  In some cases of SEVERE DEHYDRATION, particularly in adults, infusion into two veins may be necessary. One infusion can be removed when the patient is becoming rehydrated.

* It is useful to mark IV bottles at various levels to show the times at which the fluid should fall to those levels. Regulate the number of drops per minute to give the correct amount of fluid per hour.

2. Solutions for Intravenous Infusion

Although a number of IV solutions are available, they all lack some of the electrolytes in the concentration needed by severely dehydrated patients. To ensure adequate electrolyte replacement, some ORS solution should be given as soon as the patient is able to drink, even while IV treatment is being given. The following is a brief discussion of the relative suitability of several IV solutions.

[14] The femoral vein is the main vein from the leg. It is located just medial (towards the middle of the body) of the femoral artery. The femoral artery is the main artery to the leg. Its pulsation can be felt in the groin.

Preferred Solution

Ringer's Lactate Solution, also called Hartmann's Solution for Injection, is the best commercially available solution. It supplies an adequate concentration of sodium and sufficient lactate, which is metabolised to bicarbonate, for the correction of acidosis.

Ringer's Lactate Solution can be used in all age groups for dehydration due to acute diarrhoea of all causes. Early provision of ORS solution and early resumption of feeding will provide the required amounts of potassium and glucose.

Acceptable Solutions

The following acceptable solutions may not provide adequate potassium, bicarbonate, and sodium to the patient. Therefore, give ORS solution by mouth as soon as the patient can drink.

Normal Saline, also called Isotonic or Physiological Saline, is often readily available. It will not correct the acidosis. It will not replace potassium losses. Sodium bicarbonate or sodium lactate and potassium chloride can be given at the same time. This requires careful calculations of amounts and monitoring is difficult.

Half-strength Darrow's Solution, also called Lactated Potassic Saline, contains less sodium chloride than is needed to efficiently correct the sodium deficit from severe dehydration.

Half Normal Saline in 5% Dextrose contains less sodium chloride than is needed for efficient correction of dehydration. Like Normal Saline, this will not correct acidosis nor replace potassium losses.

Unsuitable Solution

Plain Glucose and Dextrose Solutions should not be used. They provide only water and sugar. They do not contain electrolytes. They do not correct the electrolyte losses or the acidosis.

ANNEX E

WHERE REFERRAL IS NOT POSSIBLE

The best possible treatment for a child with a very severe illness is usually at a hospital.

Sometimes referral is not possible or not advisable. Distances to a hospital might be too far; the hospital might not have adequate equipment or staff to care for the child; transportation might not be available. Sometimes parents refuse to take a child to a hospital, in spite of the health worker's effort to explain the need for it.

If referral is not possible, you should do whatever you can to help the family care for the child. To help reduce deaths in severely ill children, who cannot be referred, you may need to arrange to have the child stay in or near the clinic where he may be seen several times a day. If not possible, arrange for visits at home.

This annex describes treatment to be given for specific severe disease classifications when the very sick child cannot be referred. It is divided into 2 parts: "Essential Care" and "Treatment Instructions: Recommendations on How to Give Specific Treatment for Severely Ill Children Who Cannot Be Referred".

To use the annex, first find the child's classifications and note the essential care required. Then refer to the boxes on the TREAT THE CHILD chart ***and*** the instructions in second half of the annex. Because it may be difficult to treat a child at specific times during the day in clinic or at home, the Treatment Instructions include 6-hour, 8-hour and 12-hour dosing schedules for giving various drugs.

Remember that you must also give treatment for the non-severe classifications that you identified. These treatments should be marked on the Sick Child Recording Form. For example, if the child has SEVERE PNEUMONIA and MALARIA, you must treat the MALARIA ***and*** follow the guidelines below to treat the SEVERE PNEUMONIA.

Although only a well-equipped hospital with trained staff can provide optimal care for a child with a very severe illness, following these guidelines may reduce mortality in high risk children where referral is not possible.

INDEX

ESSENTIAL CARE: CHILD AGE 2 MONTHS UP TO 5 YEARS

ESSENTIAL CARE: YOUNG INFANT AGE 1 WEEK UP TO 2 MONTHS

TREATMENT INSTRUCTIONS:

Essential Care for SEVERE PNEUMONIA OR VERY SEVERE DISEASE

1. Give Antibiotic Treatment

It is essential that children with SEVERE PNEUMONIA OR VERY SEVERE DISEASE receive antibiotic treatment.

- If the child has **mild chest indrawing and does not appear to be in respiratory distress,** give oral Amoxcicllin.

  See the child each day. Make sure the child is getting better. If the child does not get better, give intramuscular (IM) antibiotics instead of oral Amoxcicllin.

- If the child has a **general danger sign or severe chest indrawing,** give both IM ampicillin and gentamycin (see Treatment Instructions).
  .

2. Give a Bronchodilator

If the child is wheezing and you have a bronchodilator, give it.[1]

[1] Instructions are provided in *Acute Respiratory Infection in Children: Case Management in Small Hospitals in Developing Countries, A manual for doctors and other senior health workers* (1990) WHO/ARI/90.5.

3. Treat Fever

If the child has an axillary temperature of 38.5°C or above, give paracetamol every 6 hours. This is especially important for children with pneumonia because fever increases consumption of oxygen.

4. Manage Fluids Carefully

Children with PNEUMONIA or VERY SEVERE DISEASE can become overloaded with fluids. If they can drink, give fluids by mouth. However, children with PNEUMONIA or VERY SEVERE DISEASE often lose water during a respiratory infection, especially if there is fever. Therefore, give fluids, but give them cautiously.

Encourage the mother to continue breastfeeding if the child is not in respiratory distress. If the child is too ill to breastfeed but can swallow, have the mother express milk into a cup and slowly feed the child the breastmilk with a spoon.

Encourage the child to drink. If the child is not able to drink, either use a dropper to give the child fluid very slowly or drip fluid from a cup or a syringe without a needle. Avoid using a NG tube if the child is in respiratory distress. Wait until the next day if there is no other option.

FLUIDS IN SEVERE PNEUMONIA OR VERY SEVERE DISEASE

AGE	Approximate amount of milk or formula to give:	Total amount in 24 hours:
Less than 12 months:	5 ml/kg/hour	120 ml/kg
12 months up to 5 years:	3 - 4 ml/kg/hour	72 - 96 ml/kg

Avoid giving fluids intravenously **unless** the child is in shock. A child in shock has cold extremities, a weak and rapid pulse, and is lethargic.

5. Manage the Airway

Clear a blocked nose. A blocked nose can interfere with feeding. Use a plastic syringe (without needle) to gently suck any secretions from the nose. Dry or thick, sticky mucous can be loosened by wiping with a soft cloth moistened with salt water. Help the child to cough up secretions.

6. Treat the child to prevent low blood sugar.

See treatment instructions.

Essential Care for
SEVERE PERSISTENT DIARRHOEA

1. Treat Dehydration Using the Appropriate Fluid Plan

2. Advise Mother How to Feed Child with Persistent Diarrhoea

See the box on the COUNSEL THE MOTHER chart. For infants less than 4 months, exclusive breastfeeding is very important. If the mother has stopped breastfeeding, help her relactate (or get help from someone who knows how to counsel on relactation).

3. Give Vitamins and Minerals

Give supplementary vitamins and minerals every day for 2 weeks. Use a mixture containing a broad range of vitamins and minerals, including at least twice the recommended daily allowance of folate, vitamin A, magnesium and copper.

4. Identify and Treat Infection

Some children with PERSISTENT DIARRHOEA have infections such as pneumonia, sepsis, urinary tract infection, ear infection, dysentery, and amoebiasis. These require specific antibiotic treatment. If no specific infection is identified, do not give antibiotic treatment because routine treatment with antibiotics is not effective.

5. Monitor the Child

See the mother and the child each day. Monitor the child's feeding and treatments and the child's response. Ask what food the child eats and how much. Ask about the number of diarrhoeal stools. Check for signs of dehydration and fever.

Once the child is feeding well and has no signs of dehydration, see the child again in 2 to 3 days. If there are any signs of dehydration or problems with the changes in feeding, continue to see the child every day. Help the mother as much as possible.

Essential Care for
VERY SEVERE FEBRILE DISEASE

1. Give Antibiotic and Antimalarial Treatment

A child with VERY SEVERE FEBRILE DISEASE needs treatment for both meningitis and severe malaria. Do ***not*** try to decide whether the child has meningitis or severe malaria. Treat for both possibilities.

- ***For meningitis,*** give both IM chloramphenicol ***and*** benzylpenicillin.

  It is preferable to give an injection every 6 hours. If this is not possible, use the 8-hour or the 12-hour dosing schedule (see Treatment Instructions).

  Give chloramphenicol injection for 5 days. If the child has improved by this time, switch to oral chloramphenicol. The total treatment duration should be 10 days. Give Benzyl Penicillin for 2 days, followed by Procaine Penicillin (50,000 unit/kg) daily for 8 days.

- ***For SEVERE MALARIA,*** give quinine intramuscular.

  Repeat the quinine injection every 8 hours while the child is able to take orally. Then continue orally to complete 10 days.

2. Manage Fluids Carefully

The fluid plan depends on the child's signs.

- If the child also has **diarrhoea with SEVERE DEHYDRATION, but has no stiff neck and no SEVERE MALNUTRITION OR SEVERE ANAEMIA,** give fluids according to Plan C.

  The general danger sign, which resulted in the classification, VERY SEVERE FEBRILE DISEASE may have been due only to dehydration. Rehydrate, and then completely reassess and reclassify the child. The reassessment and reclassification of the child after rehydration may lead to a change in treatment plan if the child no longer is classified as VERY SEVERE FEBRILE DISEASE. If the child rapidly loses his danger signs with rehydration, do not continue treatment with quinine, benzylpenicillin and chloramphenicol.

- If the child has **VERY SEVERE FEBRILE DISEASE with a stiff neck or bulging fontanelle,** restrict fluids. The child may have meningitis. Be careful to restrict the amount of fluid as follows:

FLUIDS IF MENINGITIS SUSPECTED (stiff neck or bulging fontanelle)

AGE	Approximate amount of milk or formula to give:	Total amount in 24 hours:
Less than 12 months:	3.3 ml/kg/hour	80 ml/kg/day
12 months up to 5 years:	2.5 ml/kg/hour	60 ml/kg/day

Avoid giving intravenous fluids.

If the child is vomiting everything or not able to drink or breastfeed, give fluid by NG tube.

If you do not know how to use an NG tube and the child is able to swallow, use a dropper to give the child fluid very slowly, or drip fluid from a cup or a syringe (without needle).

- If the child **has SEVERE MALNUTRITION,** give fluids as described under Essential Care for SEVERE MALNUTRITION.

3. Treat the Child to Prevent Low Blood Sugar

See Treatment Instructions.

Essential Care for
SEVERE COMPLICATED MEASLES

1. Manage Measles Complications

Management depends on which complications are present.

- If the child has **mouth ulcers,** apply half-strength (0.25%) gentian violet. Help the mother feed her child. If the child cannot swallow, feed the child by NG tube. Treat with IM chloramphenicol.

- If the child has **corneal clouding,** be very gentle in examining the child's eye. Treat the eye with tetracycline eye ointment carefully. Only pull down on the lower lid and do not apply pressure to the globe of the eye. Keep the eye patched gently with clean gauze.

- Also treat **other complications of measles, such as pneumonia, diarrhoea, ear infection.**

2. Give Vitamin A

Give 3 doses of vitamin A. Give the first dose on the first day and the second dose on day 2. Give the third dose in 2 weeks.

3. Feed the Child to Prevent Malnutrition

Essential Care for
MASTOIDITIS

Give IM ampicillin l. Treat for 10 days total. Switch to oral chloramphenicol after 3-5 days.

Essential Care for SEVERE MALNUTRITION

Children with SEVERE MALNUTRITION need specially prepared food with mineral supplements that are usually only available at a hospital or nutrition rehabilitation center. Try to refer the child to one of these locations.

While you are waiting to refer the child:

Give Antibiotic Treatment

Give antibiotics even if the child does not have signs of infection. In SEVERE MALNUTRITION, the usual signs of infection are often absent. For example, fever may not be present. The severely malnourished child with PNEUMONIA may not breathe as fast as a well-nourished child and may not show lower chest wall indrawing. Therefore, it is important to treat all severely malnourished children with antibiotics when you first start to give special feeding.

- If the child has **no specific signs of infection,** give oral cotrimoxazole for 5 days.

- If the child has **a low temperature (less than 35.5°C) or an elevated temperature (more than 37.5°C), ear or skin infection, general danger signs, PNEUMONIA, SEVERE PNEUMONIA OR VERY SEVERE DISEASE,** or VERY SEVERE FEBRILE DISEASE, give IM benzylpenicillin and IM gentamicin. Also treat for malaria.

  If the child does not improve within 48 hours, add IM chloramphenicol.

Continue Breastfeeding Frequently, Day and Night

Feed the Child

This child must be fed frequently, if necessary by NG tube. The choices of food depend on what is available.

First choice: Give a modified milk diet made of dried skim milk (DSM), sugar and oil. Start with a modified milk containing 25 grams (g) dried skim milk, 100 g sugar, 30 g vegetable oil and enough water to make up to 1000 ml. Mix the milk, sugar and oil to a paste. Slowly add warm boiled water to make a total volume of 1000 ml.[2]

These modified milk feeds have reduced lactose. They can be given to a child with SEVERE MALNUTRITION who also has PERSISTENT DIARRHOEA.

The severely malnourished child is very fragile and needs small frequent feeds. Gradually increase the volume of the feed and gradually decrease the feeding frequency. Help the mother feed the child as often as possible. It is important that the child continue to receive as many feeds as possible at night (at least twice during the night). Many severely malnourished children die during the night when they are not fed and kept warm.

The ideal feeding schedule is as follows:

DAYS	FREQUENCY	VOLUME/KG/FEED	VOLUME/KG/DAY
1 - 2	every 2 hours	11 ml	130 ml
3 - 5	every 3 hours	16 ml	130 ml
6 - 7+	every 4 hours	22 ml	130 ml

If the child has a good appetite and no oedema, you may only need to feed him for one day at each level.

Second choice: Give good complementary foods such as thick porridge with added oil. Avoid foods that contain too much lactose (that is, more than 40 ml whole milk/kg/day) or added salt. Do not add salt to the food.

Use the same feeding schedule as above.

[2] Other alternative modified milk diets are unsweetened evaporated full-fat milk (120 ml and 100 g of sugar and 20 ml oil), fresh cow's milk (300 ml and 100 g sugar and 20 ml oil) or skimmed, unsweetened evaporated milk (120 ml and 100 g sugar and 30 ml oil). For all recipes, add warm, boiled water to make 1000 ml.

Replace Essential Minerals

Add 0.5 ml/kg of potassium chloride solution to each feed.[3] Give 2 ml of 50% magnesium sulfate solution[4] once by IM injection.

Give Iron When Child's Appetite Returns

If the child has anaemia, do ***not*** start iron treatment until the child's appetite returns. Before this, iron can make an infection worse.

Manage Diarrhoea with Dehydration Carefully

Children with SEVERE MALNUTRITION and diarrhoea with SOME or SEVERE DEHYDRATION may not be as dehydrated as the signs indicate. The slow skin pinch, sunken eyes, lethargy or irritability may be due to SEVERE MALNUTRITION.

ORS solution contains too much salt and too little potassium for children with SEVERE MALNUTRITION. Mix an ORS packet with **2** litres of water (instead of 1 litre of water). Then add 50 g of sugar (or 10 level teaspoons) and 45 ml of potassium chloride solution.3 Mix carefully.

Rehydrate more slowly than normal. Monitor the child carefully. If the child's breathing rate and heart rate increase when he is being rehydrated, this may mean that too much fluid has been given too quickly. Stop giving the fluid. Resume giving fluid when the rates have slowed.

Monitor the Child's Temperature

Keep the child warm. Make sure the child is covered at all times, especially at night.

If the rectal temperature is below 35.5°C, place the infant on the mother's bare abdomen. Cover a child with a blanket or place a heater nearby. Make sure the child is clothed and wearing a hat or bonnet. It is especially important to feed this child every 2 hours until he is stable. Give IM antibiotics for possible sepsis.

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[3] From stock solution containing 100 g KCl per litre.

[4] 50% magnesium sulfate solution has 4 mEq Mg^{++} per ml.

Essential Care for SEVERE ANAEMIA

A child with severe anaemia is in danger of heart failure.

Give Iron By Mouth

Give Antimalarial,

Treat with an effective antimalarial. In areas with some resistance to the first-line oral antimalarial, give the second-line oral antimalarial.

Feed The Child

Give good complementary foods.

Give Paracetamol If Fever Is Present

Give paracetamol every 6 hours.

Give Fluids Carefully

Let the child drink according to his thirst. Do ***not*** give IV or NG fluids.

Essential Care for Cough More Than 30 Days

1. Give First-line Antibiotic for PNEUMONIA

If the child has not been treated recently with an effective antibiotic for PNEUMONIA, give an antibiotic for 5 days.

2. Give Salbutamol

If the child is wheezing or coughing at night, or there is a family history of asthma, give salbutamol for 14 days.

3. Weigh the Child and Inquire about Tuberculosis (tb) in the Family

4. See the Child in Follow-up in 2 Weeks

If there is no response to the antibiotic (with or without salbutamol) or if the child is losing weight, try again to refer to hospital. If referral is still not possible, begin TB treatment. Refer to the national TB guidelines.

Essential Care for POSSIBLE SERIOUS BACTERIAL INFECTION

This young infant may have pneumonia, sepsis or meningitis.

GIVE IM BENZYLPENICILLIN AND IM GENTAMICIN

Give both benzylpenicillin and gentamicin with the dose indicated in the treatment chart for at least 5 days. Give benzylpenicillin every 6 hours plus gentamicin every 8 hours. For infants in the first week give gentamicin every 12 hours.

If meningitis is suspected (based on a bulging fontanelle, lethargic or unconscious, or convulsions), substitute IM ampicillin for benzylpenicillin if it is available. Treat for 14 days total.

If meningitis is not suspected, treat for at least 5 days. Continue the treatment until the infant has been well for at least 3 days.

When the infant's condition has improved substantially, substitute an appropriate oral antibiotic such as amoxycillin for IM benzylpenicillin or IM amoxycillin. However, continue to give IM gentamicin until the minimum treatment has been given.

If there is no response to the treatment after 48 hours, or if the infant's condition deteriorates, then give chloramphenicol. Avoid chloramphenicol in premature infants.

Keep the Young Infant Warm

Small infants lose heat rapidly, especially when wet. Feel the infant's hands and feet. They should be warm. To maintain the body temperature, keep the sick infant dry and well wrapped. If possible, have the mother keep her infant next to her body, ideally between her breasts. A hat or bonnet will prevent heat loss from the head. If possible, keep the room warm.

Manage Fluids Carefully

The mother should breastfeed the infant frequently. If the infant has difficulty breathing or is too sick to suckle, help the mother express breastmilk. Feed the expressed breastmilk to the infant by dropper (if able to swallow) or by NG tube 6 times per day. Give 20 ml of breastmilk per kilogram of body weight at each feed. Give a total of 120 ml/kg/day.

If the mother is not able to express breastmilk, prepare a breastmilk substitute or give diluted cow's milk with added sugar, as described in section 3.1 of the module Counsel the Mother.

Treat the Child to Prevent Low Blood Sugar

See Treatment Instructions.

TREATMENT INSTRUCTIONS

Recommendations on How to Give Specific Treatments for Severely Ill Children Who Cannot Be Referred

Three dosing schedules for drugs are provided in this annex. The schedules are for every 6 hours (or four times per day), every 8 hours (or three times per day), and once daily . **Choose the most frequent schedule that you are able to provide.** For IM gentamicin, the only options are twice and three times per day.

AMPICILLIN

- Dilute 500mg vial with 2.1ml of sterile water (500mg/2.5ml).
- IF REFERRAL IS NOT POSSIBLE OR DELAYED, repeat the ampicillin injection every 6 hours.
- **Where there is a strong suspicion of meningitis, the dose of ampicillin can be increased 4 times.**

GENTAMICIN

- 7.5 mg/kg/day once daily

:

AGE or WEIGHT	**AMPICILLIN** 500 mg vial	**GENTAMICIN** 2ml/40 mg/ml vial
2 up to 4 months (4 - <6 kg)	1 m	0.5-1.0 ml
4 up to 12 months (6 - <10 kg)	2 ml	1.1-1.8 ml
12 months up to 3 years (10 - <14 kg)	3 ml	1.9-2.7 ml
3 years up to 5 years (14 - 19 kg)	5 m	2.8-3.5 ml

Quinine -

➢ *Give Quinine for Severe Malaria*

FOR CHILDREN BEING REFERRED WITH VERY SEVERE FEBRILE DISEASE:

- ➢ Check quinine formulation available in your clinic.
- ➢ Be sure the child is well hydrated.
- ➢ Give first dose of intramuscular quinine and refer child urgently to hospital.

IF REFERRAL IS NOT POSSIBLE:

- ➢ Give first dose of intramuscular quinine.
- ➢ The child should remain lying down for one hour.
- ➢ Repeat the quinine injection every 8 hours until the child is able to take orally, and then continue quinine orally to complete 7 days. Do not continue injections, for more than one week.

Age	Weight/kg	Quinine injection (ml)	Normal saline or distilled water for dilution	Total injection volume (ml)
<4 months	5-6	0.2	0.8	1
4-11months	7-10	0.3	1.2	1.5
1yr-<2yrs	11-14	0.4	1.6	2
2yrs-<5yrs	15-18	0.6	2.6	3

Give first dose of quinine. Repeat the IM quinine injection at 4 and 8 hours later. These 3 injections are the loading dose.

Then either give quinine (the same dose as above) every 12 hours or give quinine every 8 hours (using the 8-hour dosing schedule). Stop the IM quinine when the child is able to take an oral quinine.

The injections of quinine should not continue for more than 1 week. Too high of a dosage can cause deafness and blindness, as well as irregular heartbeat (which may cause to cardiac arrest).

The child should remain lying down for one hour after each injection as the child's blood pressure may drop. The effect stops after 15 - 20 minutes.

When the child can take oral quinine, give a full dose according to national guidelines for completing the treatment of severe malaria.

Treat the Child to Prevent Low Blood Sugar -

If the child is conscious, follow the instructions on the TREAT chart. Feed the child frequently, every 2 hours, if possible.

If the child is unconscious and you have dextrose solution and facilities for an intravenous (IV) infusion, start the IV infusion. Once you are sure that the IV is running well, give 5 ml/kg of 10 % dextrose solution (D10) over a few minutes, or give 1 ml/kg of 50% dextrose solution (D50) by very slow push. Then insert an NG tube and begin feeding every 2 hours.

Potassium Chloride Solution (100 grams KCl per litre) -

Give 0.5 ml (or 10 drops from a dropper) per kilogram of body weight with each feed. Mix well into the feed.

Diazepam and Paraldehyde (anticonvulsants) -

Give the diazepam or paraldehyde rectally (through a short piece of nasogastric tube, or a small syringe) as described in section 5.3 of this module.

If both diazepam and paraldehyde are available, use the following schedule:

1. Give **diazepam**.
2. In 10 minutes, if convulsions continue, give **diazepam** again.
3. In 10 more minutes (that is, 20 minutes after the first dose), if convulsions continue, give **paraldehyde**.
4. In 10 more minutes (that is, 30 minutes after the first dose), if convulsions continue, give **paraldehyde** again.

This is the preferred treatment. It is safer than giving 3 doses of diazepam in a row due to the danger of respiratory depression.

If only diazepam is available, use the following schedule:

1. Give **diazepam.**
2. In 10 minutes, if convulsions continue, give **diazepam** again.
3. In 10 more minutes (that is, 20 minutes after the first dose), if convulsions continue and the child is breathing well, give **diazepam** again. Watch closely for respiratory depression.

DOSAGE TABLE - DIAZEPAM

AGE or WEIGHT	**DIAZEPAM** 10mg/2mls
2 months up to 6 months (5 - 7 kg)	0.5 ml
6 months up to 12months (7 - <10 kg)	1.0 ml
12 months up to 3 years (10 - <14 kg)	1.5 ml
3 years up to 5 years (14-19 kg)	2.0 ml

EXAMPLE

Margaret is 18 months old. She became sick a week ago. She developed fever, lost her appetite and began to cough.

Margaret's mother bought some chloroquine 3 days ago and has given Margaret a whole tablet each day. Still Margaret has a fever and now is very sleepy. When her mother makes her eat, Margaret cries weakly. For the last few days, the mother has been afraid to feed Margaret because she is so sleepy and seems to have trouble swallowing. The mother is afraid the child will choke on the food. Margaret stopped breastfeeding 4 months ago when her mother became pregnant.

Margaret's assessment shows the following:

Her axillary temperature is 39°C. She weighs 8 kg. She is very lethargic, waking only for a few seconds before falling asleep again. She has not had convulsions. She is not able to drink now because she is so lethargic. Her breathing rate is 52 beats per minute. She has intercostal indrawing but no lower chest wall indrawing, no stridor and no wheeze. She does not have diarrhoea.

The health worker does not think Margaret's neck is stiff. She has no rash. Margaret does not have an ear problem.

Margaret is thin but does not have visible wasting. She has some palmar pallor. When you press on her feet, there is no oedema. Margaret is up to date on her immunizations.

The health worker classifies Margaret as SEVERE PNEUMONIA OR VERY SEVERE DISEASE, VERY SEVERE FEBRILE DISEASE and ANAEMIA.

The nearest hospital is a day's journey away and the mother cannot go there. Her husband is away and she must care for her other children. She also does not think that there are drugs at the hospital and she has no money to pay for her food there.

Margaret cannot be referred. She can stay with her mother at the house of an aunt who lives near the clinic. The mother will bring the child for injections. One of the nurses in the clinic is willing to come to the aunt's house to help care for Margaret in the evening.

It is now 9 am and the clinic is open until lunch. The health worker will conduct a special session for follow-up and nutrition counselling from 3 pm to 4 pm today. The clinic is open during the same hours tomorrow.

The health worker decides that it will be possible to give injections approximately every 8 hours. He will give the first injection now (9 am) and the second at 4 pm as the clinic is closing. The third injection will be given to Margaret in the late evening when the nurse visits Margaret at the aunt's house.

The health worker immediately gives the following treatments:

1. ***Benzylpenicillin*** - 1 000 000 units with 2.1 ml of sterile water added to get 2.5 ml at 400 000 units/ml:

   The health worker gives Margaret 1.6 ml by intramuscular injection, based on the 8-hour dosing schedule. This same dose will be given to Margaret approximately every 8 hours.

2. **Chloramphenicol** 1000 mg vial with 5 ml of sterile water added to get 5.6 ml at 180 mg/ml:

   The health worker gives Margaret 1.5 ml by intramuscular injection, based on the 8-hour dosing schedule. This same dose will be given to Margaret approximately every 8 hours.

3. **Quinine:** The health worker gives Margaret the initial dose of 0.3 ml of 300 mg/ml plus 1.2 ml diluent = 1.5 ml of solution at 60 mg/ml. The same dose is given 4 and 8 hours later. Then the health worker will continue to give Margaret the same dose every 8 hours until she is able to take oral quinine.

4. **Sugar Water:** The health worker gives Margaret 50 ml of sugar water by NG tube.

The health worker sends for whole, undiluted cow's milk. He crushes a 100 mg paracetamol tablet to mix with the milk. He gives Margaret 30 ml of the milk by NG tube every hour during the rest of clinic. To the first 30 ml, he adds the paracetamol. He repeats the dose in 6 hours.

The health worker asks the mother to hold Margaret to keep her warm. The mother also adjusts Margaret's hat and blanket so she is covered.

When the nurse visits Margaret at her aunt's home in the evening, she slowly gives her 100 ml of the milk by NG tube. The nurse does not give more than 100 ml because she is worried that Margaret may vomit if given more. The same amount is given when the clinic opens the next morning. At that time, Margaret is more alert and able to swallow the fluids that are dripped into her mouth. The health worker gives the mother a 10 ml syringe so that she can feed her child this way. The health worker tells the mother to try to give Margaret 3 syringe-fulls of milk every hour.

Because Margaret is so sick and cannot swallow, the non-urgent treatments, such as iron are not given now.

After 4 days of treatment, Margaret is alert and her fever is gone. She is able to take sips from a cup. The health worker decides to stop the quinine injections and to continue the treatment with quinine orally for the next 6 days to complete 10 days of treatment.

Because the health worker is uncertain whether VERY SEVERE FEBRILE DISEASE was meningitis or severe malaria, he wants to be sure that all possibilities are adequately treated but needs to stop giving these frequent injections. Therefore, he stops the IM chloramphenicol and benzylpenicillin and gives oral chloramphenicol (¾ tablet every 6 hours). He gives this for 6 more days to complete 10 days of treatment.

The health worker continues to see Margaret every day for a few more days. He wants to make sure that she continues to improve and begins eating, and that the mother is able to give the chloramphenicol 4 times per day.

The health worker now reviews with the mother how Margaret was fed before this illness. He advises the mother that the child should receive good complementary foods or family foods at least 5 times per day. Because he does not want to confuse the mother with too many pills, the health worker decides not to start the iron treatment until Margaret finishes the full 10 days of antibiotic treatment.

When Margaret and her mother return, the health worker gives the mother a bottle of iron syrup and shows her how to measure ¼ teaspoon. He also shows her how to give it to Margaret. He tells the mother to give ¼ teaspoon to Margaret every morning. He also tells the mother to make sure the syrup is kept out of reach of Margaret and her siblings. Then he arranges to see Margaret again in 2 weeks when he will check on her pallor and give the mother more iron syrup.