March 2005

MANAGEMENT OF NEONATAL AND CHILDHOOD ILLNESS IN DISASTERS

TRAINING MODULE FOR HEALTH WORKERS

2005

This document was prepared by the Indian academy of Pediatrics(IAP) Disaster management group with technical and Financial assistance from WHO-India

CONTENTS

1. Introduction…………………………………………… ……………………… 3

2. Drug Supplies ………………………………………… ……………………… 3

3. Management of Young Infants (< 2 moths Age) …………………… 5

4. Assess for signs of serious illness 6

5. Assess for signs of local infection 7

6. Treat all Young Infants 8

7. Management of children aged 2 months to 5 years 11

8. Check for General Danger Signs 12

9. Cough or difficult breathing………………………………………………… 13

10. Diarrhoea ……………………………………………………………………… 14

11. Fever ………………………………………………… 16

12. Nutrition …………………………………………………...………………….. 17

13. Measles Immunisation ……………………………………………………….. 18

14. Treat all children ……………………………………………………………… 19

1.0 INTRODUCTION

Children up to five years of age are one of the most vulnerable groups during disasters and are prone to suffer from infections and malnutrition. It is eminently possible for health workers to treat most sick children at **health camps** or in the **community** and save them from dying. The guidelines provided in this module describe the steps to be followed by a **health worker** for the management of a sick child up to five years of age. These guidelines have been adapted from National IMNCI (Integrated Management of Neonatal and Childhood Illness) and can also be used by **trained health volunteers** to provide preliminary treatment.

Due to technical reasons management of illness in young infants below 2 months of age is somewhat different from management of children 2 months to 5 years of age. Guidelines for both groups are presented in this module.

2.0 STANDARD CASE MANAGEMENT PROCESS

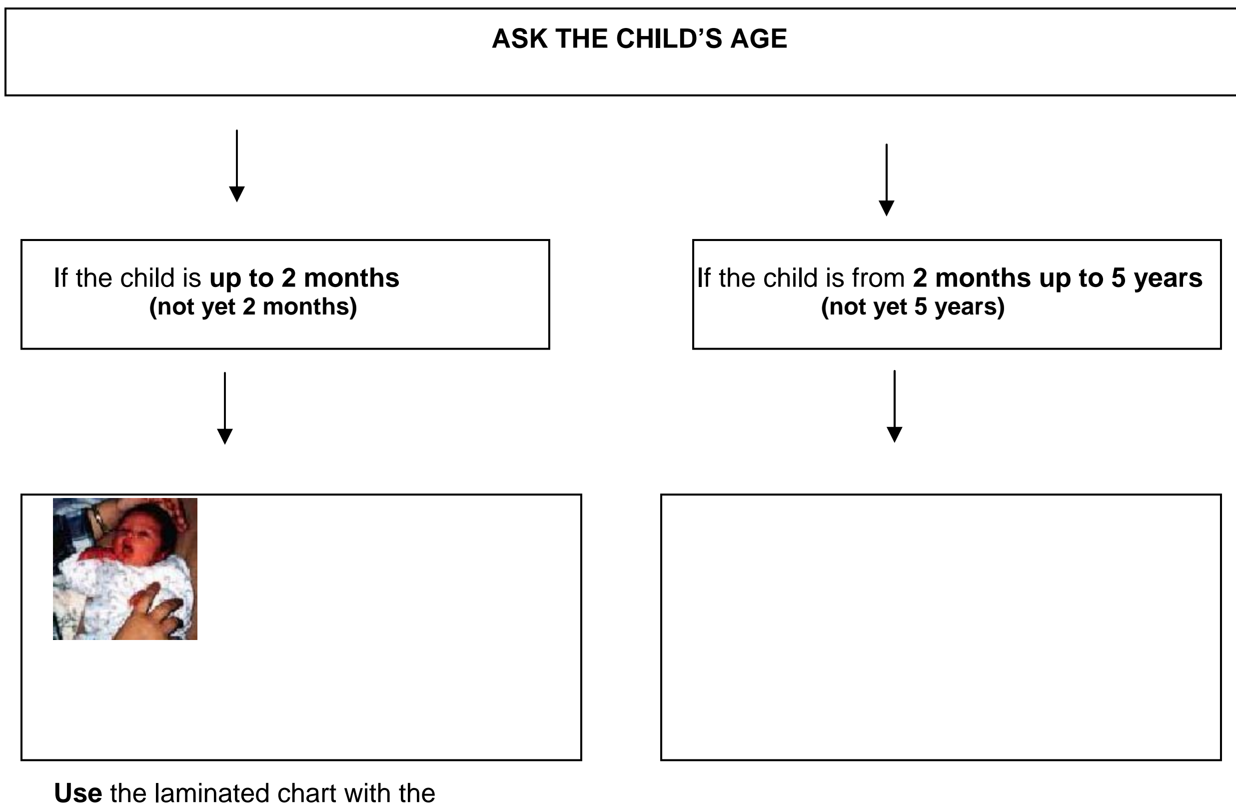
➢ **How to begin when an infant or a child is brought to you:**

- **Greet the mother** with a friendly smile
- **Ask the mother what the infant's problems are**
- **Use good communication skills:**
  - **Listen carefully to what the mother tells you**. This will show her that you are taking her concerns seriously and ensure good rapport.
  - **Use words the mother understands.** If she does not understand the questions you ask her, she cannot give the information you need.
  - **Give the mother time to answer the questions**. For example, she may need time to decide if a symptom you asked about is present.
  - **Ask additional questions** when the mother is not sure about her answer

For management purpose the children are divided into two age groups:

- Sick young infants age up to 2 months (0 to 59 days old)
- Sick children 2 months up to 5 years (2 to 59 months)

ASK THE CHILD'S AGE



If the child is **up to 2 months** **(not yet 2 months)**

Use the laminated chart with the Photograph

If the child is from **2 months up to 5 years** **(not yet 5 years)**

Use the laminated chart without Photograph

Introduction to Laminated Charts

The Front side of each laminated chart given with this module has three columns. From left to right these are:

"**First**" **column** lists the **Assessment Steps**
"**Second**" **column** summarizes the **Signs and Symptoms** present
"**Third**" **column** lists appropriate **Treatment**

The Laminated Charts are organized in three different colours (red, yellow and green):

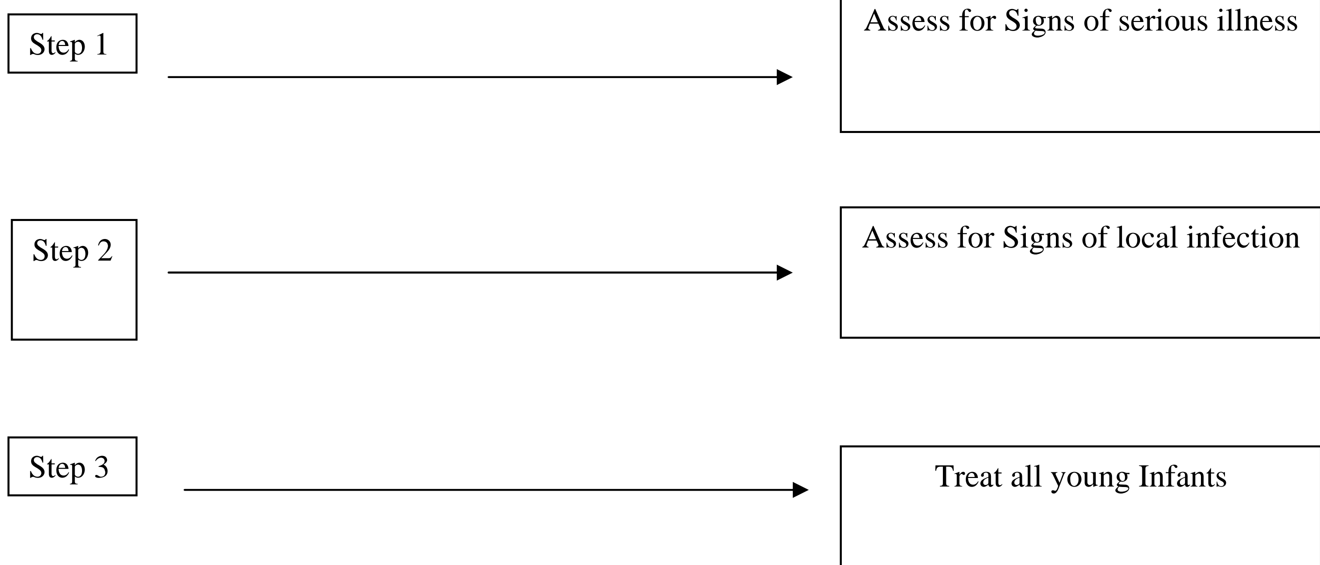
- Conditions included in the boxes with **red colour** indicate **severe illness**. Children with a severe illness must be **referred** to a hospital or a doctor.
- Conditions included in the boxes with a **yellow colour** need to be treated at home with **medicine** and home care.
- Conditions included in the boxes with **green colour** are to be treated with **home care and do not need medicines.**

Important **steps of treatment** are described on the other side of the Laminated Charts.

There will be a demonstration on the use of the laminated charts

3.0 MANAGEMENT OF YOUNG INFANT (AGE UPTO 2 Months)

It is important to follow ALL steps given below in assessing every Young Infant who is brought to the health worker.

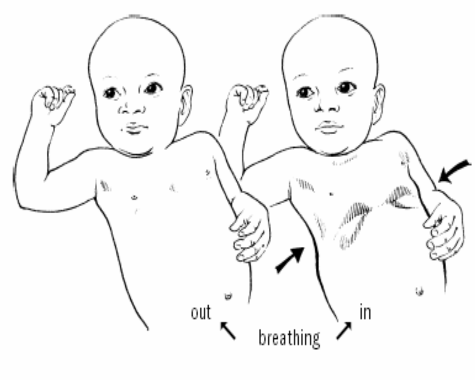


Step 1
Assess for Signs of serious illness

Locate corresponding Section on the Chart

• **Convulsions**: Ask the mother if young infant has convulsions. • **Not able to feed:** If a mother says that the infant is **not able to feed**, watch her try to feed the infant to confirm if infant is able to feed. • **Fast breathing**: Breathing rate of 60 or more breaths per minute is taken as '*fast breathing'* in a young infant. If the first count is 60 or more, repeat the count. If the second time also the breathing rate is 60 breaths or more, the young infant has 'fast breathing'. • **Severe chest indrawing**: Mild chest indrawing is normal in young infant because the chest wall is soft. Severe chest indrawing is quite deep and easy to see. • **Nasal flaring:** Nasal flaring is widening of the nostrils when the young infant breathes in. • **Feels hot or unusually cold**: Feel the 'infant' stomach or axilla (underarm) and determine if it feels hot or unusually cold. • **10 or more skin pustules or a big boil**. • **Lethargic or unconscious**: A lethargic young infant is not awake and alert when she should be and is difficult to awake by stimulation or has movements less than normal. An unconscious infant cannot be wakened at all. • **Blood in stool.**	**If any one sign is present,** **Refer the child** • Explain the need for referral • Calm her fears and discuss possible solutions for any difficulty in referral • Advise the mother to continue to breast feed the baby and keep the sick young infant warm • Write a referral slip

For chest indrawing to be present, it must be clearly visible and present all the time. If you only see chest indrawing when the young infant is crying or feeding, the young infant does not have chest indrawing.



Lower chest wall indrawing: with inspiration, the lower chest wall moves in

****

Step 2
Assess for Signs of local infection

Locate corresponding Section on the Chart

• **Umbilical redness or umbilicus draining pus** **OR** • **Skin pustules (Less than 10 skin pustules)**	• **Give oral co-trimoxazole (or amoxicillin) for 5 days** • **Teach the mother to give local treatment for skin pustules and umbilical infection** • **Advise mother to give home care for the young infant**

1. Discuss Photographs
2. Drill on signs in young infant

****

Step 3
Treat all young Infants

Locate corresponding Section on the Chart

A) Refer all sick Young Infants having any sign in the red box.

The following steps are necessary for a successful referral:

1. Explain to the mother the need for referral and get her agreement for the same.
2. Calm her fears and discuss possible solutions for any difficulty in referral.
3. Advise the mother to continue to breast feed the baby (if able to feed) and keep the sick young infant warm while transporting the baby. The best way to warm a baby with low temperature is by placing the baby in skin-to-skin contact with the mother (or any adult). Skin to skin contact can be used to keep a baby warm both during transport and at home.

4. Write a referral slip for the mother to take to the hospital, tell her to give this card to the doctor in the hospital.

REFERRAL SLIP

Date

Name Age Sex

Signs

Treatment given:

Signature

Designation & Place

If referral is not possible, and IM antibiotics can be made available:
Arrange for once daily IM gentamicin (5mg/Kg) and oral amoxicillin for 10 days

Role Play on Referral and discussion on how to keep the Young Infant warm

B) Treatment for any sign in yellow box (local infection):

- Give oral co-trimoxazole (or amoxicillin) for 5 days. Dose table is given below:
- Teach the mother to give local treatment for skin pustules and umbilical infection
- Advise mother to give home care for the young infant

AGE or WEIGHT	COTRIMOXAZOLE (trimethoprim + sulphamethoxazole) • Give two times daily for 5 days		AMOXICILLIN • Give three times daily for 5 days	
	Adult Tablet single strength (80 mg trimethoprim + 400 mg sulphamethoxazole)	Pediatric Tablet (20 mg trimethoprim +100 mg sulphamethoxazole)	Tablet 250 mg	Syrup125 mg in 5 ml
Birth up to 1 month (< 3 kg)		1/2		1.25 ml
1 month up to 2 months (3-4 kg)	1/4	1	1/4	2.5 ml

STEPS IN TEACHING THE MOTHER TO GIVE ORAL DRUGS AT HOME

- Determine the appropriate drugs and dosage.
- Demonstrate how to measure a dose.
- Watch the mother practise measuring a dose by herself.
- Explain carefully how to give the drug.
- Ask the mother to give the first dose to her child in front of you.
- Then lable and package the drug and explain that all the medicine must be used to finish the course of treatment, even if the infant gets better.
- Check the mother's understanding before she leaves.

Teach the mother to give local treatment for skin pustules and umbilical infection

- Apply gentian violet paint twice daily.

  The mother should:
  - Wash hands
  - Gently wash off pus and crusts with soap and water
  - Dry the area
  - Paint with gentian violet 0.5%
  - Wash hands again

There will be a demonstration role play on teaching the mother how to give oral drugs at home.

C) Advise Mother to Give Home Care:

Home care advice is given to all those young infants who are not being referred

- Breastfeed frequently, as often (at least 8 times in 24 hours) and for as long as the infant wants, day or night, during sickness and health. Do not give water, other liquids or foods.

- Teach Correct Positioning and Attachment for Breastfeeding

  - ➢ Show the mother how to hold her infant
    - with the infant's head and body straight
    - facing her breast, with infant's nose opposite her nipple
    - with infant's body close to her body
    - supporting infant's whole body, not just neck and shoulders.

  - ➢ Show her how to help the infant to attach. She should:
    - touch her infant's lips with her nipple
    - wait until her infant's mouth is opening wide
    - move her infant quickly onto her breast, aiming the infant's lower lip well below the nipple.
  - ➢ Look for signs of good attachment and effective suckling. If the attachment or suckling is not good, try again.

  - ➢ If still not suckling effectively, ask the mother to express breast milk and feed with a cup and spoon
  - ➢ If able to take with a cup and spoon advise mother to keep breastfeeding the young infant and at the end of each feed express breast milk and feed with a cup and spoon .

- In cool weather, cover the infant's head and feet and dress the infant with extra clothing. Make sure the young infant stays warm at all times.

- Advise mother to wash hands with soap and water after visiting toilet, and after cleaning the bottom of the baby.

- Do not apply anything on the cord and keep the cord and umbilicus dry.

➢ Advise the mother to return immediately if the young infant has any of these signs of severe illness:

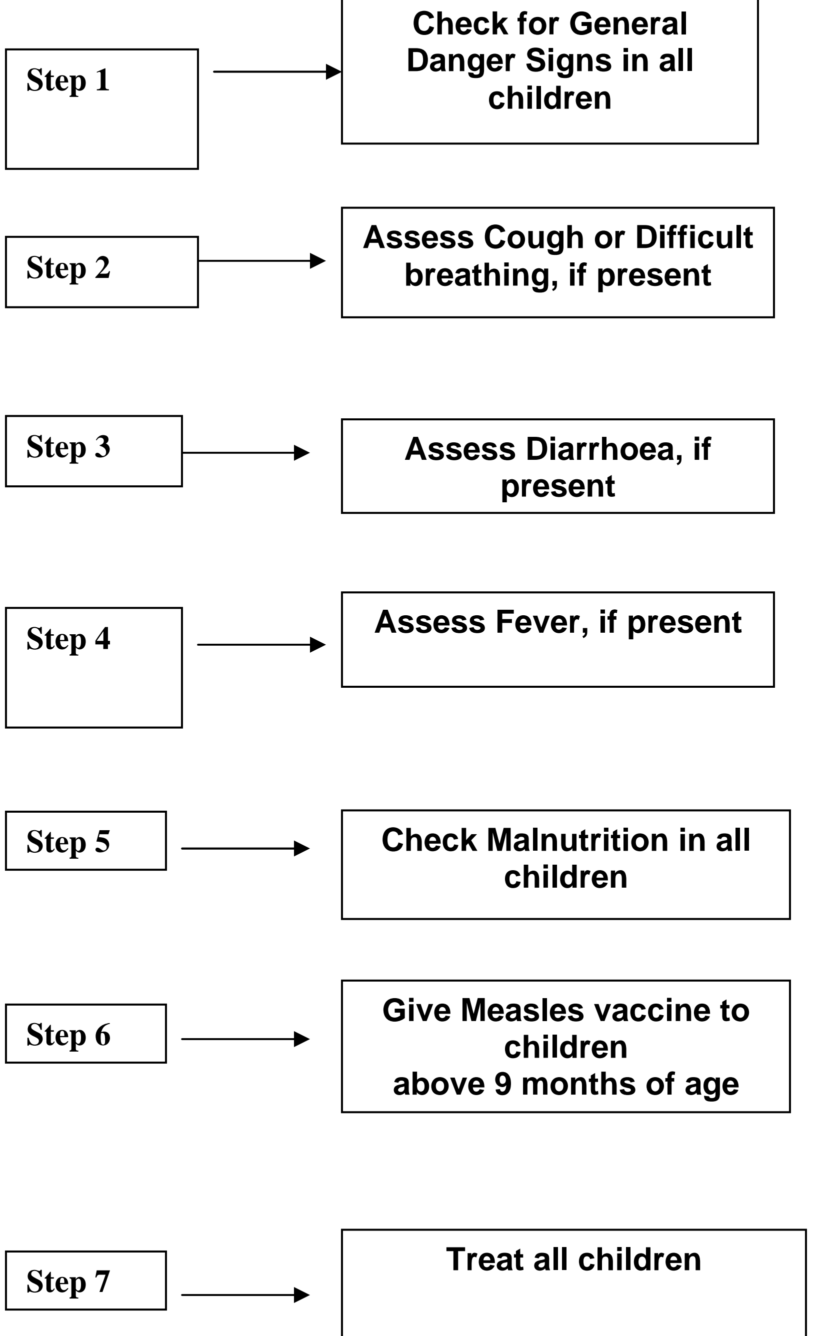
- Breastfeeding or drinking poorly
- Becomes sicker
- Develops a fever or feels cold to touch
- Fast breathing
- Difficult breathing
- Blood in stools

Drill on Home Care Instructions

****

4.0 MANAGEMENT OF CHILDREN AGED 2 MONTHS UP TO 5 YEARS

It is important to follow ALL steps given below in assessing every child who is brought to the health worker.



Step 1
Check for General Danger Signs in all children

CHECK FOR GENERAL DANGER SIGNS

In all sick children the first step is to check for the following general danger signs. This is important as a child with any danger sign has *very severe disease* and is in danger of dying.

a). *The child is 'Not able to drink or breast feed'*

This means either that:

- the child can not drink at all

or

- the child is too weak to drink

b) *The child 'Vomits everything'*

- Whenever the child does drink something, he or she vomits everything that's taken.

c). *The child is 'Lethargic or unconscious'*

The lethargic child is sleepy when the child should be awake. A child who stares blankly and does not appear to notice what is happening around is also lethargic.

The unconscious child does not wake up at all. The child does not respond to touch, loud noise or pain.

d) The child has had 'Convulsions'

Convulsion(s) in the current illness episode is significant and indicates severe disease

Refer the child to hospital urgently if any general danger sign is present. Complete the rest of the assessment quickly so that referral is not delayed.

Group Discussion

****

Step 2
Assess Cough or Difficult Breathing, if present

COUGH OR DIFFICULT BREATHING

Ask the mother if the child has cough or difficult breathing. If she says YES only then proceed further in this step.

Count the child's breathing rate and check for the presence of chest indrawing.

a). Count the Breathing Rate

The breathing rate must be counted for one full minute. Count the breathing rate only when child is calm and quiet. It will be difficult to count the breathing rate correctly if the child is crying or upset .The breathing rate may be falsely increased if the child is crying.

If the child 's age is	The child has *fast breathing* If she has:
2 months up to 12 months	50 breaths or more per minute.
12 months up to 5 years	40 breaths or more per minute.

A child with fast breathing has *pneumonia*

b). Look for Chest Indrawing

Make sure that the child's lower chest is fully exposed and you can see it clearly while checking for chest indrawing. Look for indrawing of the lower chest wall. **Chest Indrawing is present when lower chest wall goes IN as child breaths IN.** Normally the lower chest wall comes OUT when the child breaths IN.

A child with chest indrawing has *severe pneumonia*

Locate corresponding Section on the Chart.

Chest indrawing **(Severe Pneumonia)**	➢Refer urgently to hospital, if possible ➢Give first dose of co-trimoxazole or amoxicillin before referral If referral is not possible: Give oral amoxicillin for 5 days
Fast breathing, no chest indrawing - **(Pneumonia)**	➢Give cotrimoxazole for 5 days ➢Provide home care ➢Ask mother to return after 2 days or earlier if child becomes sicker
No fast breathing **No chest indrawing** - **(No Pneumonia, only cough and cold)**	➢Provide home care ➢Cough of more than 30 days, refer for assessment if possible (non urgent referral)

****

Colour the Box
Drill on GDS and Cut off for fast breathing

Step 3
Assess Diarrhoea, if present

DIARRHOEA

- Ask the mother if the child has diarrhoea. Diarrhoea is frequent passage of watery stool. Mother's perception that the child is suffering from diarrhea should be accepted.
- If the child has diarrhoea, ask for how long the child has had diarrhoea.
  If the duration of diarrhoea is for 14 days or more, the child has *Persistent Diarrhoea.*
- Ask if there is blood in stool.
  The child who has blood in the stools has *Dysentery*.

Check all children with diarrhoea for the following 4 signs of dehydration:

- **General condition**: Is the child *'Lethargic or Unconscious'*? *'Restless and Irritable'?*

  When you checked for general danger signs (described above), you checked to see if the child was ***lethargic or unconscious***.

  A child has the sign ***restless and irritable*** if the child is crying all the time or every time he is touched and handled. If an infant or child is calm when breastfeeding but again becomes restless and irritable when he stops breastfeeding, he has the sign "restless and irritable". Many children can be consoled and calmed. They do not have the sign "restless and irritable".

- **Sunken eyes:**

  Look and decide if the eyes are sunken. Then ask the mother if she thinks her child's eyes look unusual. Her opinion helps you confirm that the child's eyes are sunken.

- **Check the child's ability to drink.**

  - Offer the child plain clean water or ORS solution to drink. If the child does not take any water at all or vomits it out completely or is not able to keep any water down, the child is '*not able to drink*'.
  - If the child reaches out for the cup or glass or if child opens the mouth when water is offered or begins to cry when the water is taken away, the child has the sign '*drinking eagerly, thirsty*'.
  - The child drinks normally if water is taken after some encouragement by the mother.

- **Check for skin pinch**

  Pinch the skin on the abdomen (between the naval and side of the abdomen) with thumb and the first finger by lifting it for one second and releasing it. After leaving the skin, see how soon the skin returns to normal.

  - If the skin comes back very slowly, that is, it takes more than 2 seconds the skin pinch is very slow.
  - If the skin does not return to normal immediately, the skin pinch is slow
  - If the skin pinch returns to normal immediately, it is normal.

Based on these four signs dehydration is classified as 'Severe', 'Some' or 'No' dehydration as described in the following box:

Locate corresponding Section on the Chart.

Diarrhoea for 14 days or more	➢ Refer to a hospital
If the child has two or more of the following signs she has SEVERE DEHYDRATION: • Lethargic or unconscious • Sunken eyes • Not able to drink or drinking poorly • Skin pinch goes back very slowly.	➢ Refer urgently to a hospital for treatment of 'severe dehydration'. If the child is able to drink, give frequent sips of ORS on the way.
If the child has two or more of the following signs she has SOME DEHYDRATION: • Restless, irritable • Sunken eyes • Drinks eagerly, thirsty • Skin pinch goes back slowly.	➢ Treat 'some dehydration' with ORS ➢ Teach home care
Blood in the stool.	➢ Give cotrimoxazole for 5 days. (2 Pediatric tablet twice daily for a child 2 months up to 12 months and 3 tablets twice daily for a child 12 months up to 5 years)
If there are not enough signs in red or yellow boxes, then there is NO DEHYDRATION	➢ Teach home care

****

Facilitator will discuss Photographs and colour the box

Step 4
Assess Fever,
if present

FEVER

First ask the mother if the child has fever. See if child feels hot to touch. Fever is present if the mother gives history of fever or if you have determined that the child feels hot to touch.

Locate corresponding Section on the Chart.

No apparent cause of fever (Malaria)	➢Make blood smear if possible ➢Give Chloroquine for 3 days. ➢Give paracetamol every 6 hours until high fever is gone
Child has another cause of Fever	➢ Give paracetamol every 6 hours until high fever is gone ➢Advise extra fluids, continue feeding and advise about when to return immediately (*Not able to drink or breastfeed, becomes sicker)* ➢If fever is present every day for more than 7 days, refer for assessment.

Group discussion

****

Step 5
Check Malnutrition in all Children

NUTRITION

Every child should be checked for severe malnutrition and severe anaemia.

Check for visible severe wasting

A child has visible severe wasting if the child looks all skin and bones. Remove all the child's clothes to check for wasting. The arms and legs of a severely wasted child look like sticks. The shoulder and buttocks are wasted and there are wrinkles on the buttocks and thighs. Visible wasting is a sign of *severe malnutrition*. A child with this sign should be referred urgently.

Check for swelling (Oedema) of both feet

With your thumb, press gently for a few seconds. Swelling is present if there is depression left in the place where you pressed. This should be checked on the other foot also. The presence of swelling of both feet is a sign of severe *malnutrition.*

Any child with visible severe wasting or oedema both feet is severely malnourished and has high risk of dying. Such children should be referred urgently

Look for severe Palmar pallor.

To check for palmar pallor hold the child's palm open by grasping it gently from the side. Do not stretch the fingers backwards. Compare the colour of the child's palm with your own palm. If the skin of the palm is very pale or so pale that it looks white, the child has severe palmar pallor. Such children should also be referred urgently

Locate corresponding Section on the Chart.

Visible severe wasting or Oedema of both feet or severe palmar pallor	➢Refer Urgently ➢Give vitamin A(100,000 I.U) for age 9-12 months and 200,000 I.U for age 1-5 years.
All Other Children	➢Up to 6 months of age: Encourage mothers to exclusively breastfeed as often as the child wants, day and night, at least 8 times in 24 hours. Do not give any other fluid or food. ➢6 months to 12 months: Breastfeed as often as the child wants. In addition give adequate servings of locally available complementary foods at least 3 times a day. ➢12 months to 5 years: Breastfeed as often as the child wants. Give adequate serving of locally available complimentary food at least 5 times a day.

Facilitator will Discuss Photographs

****

Step 6
Give Measles vaccine to children above 9 months of age

MEASLES IMMUNISATION

- Give measles vaccine to all children above nine months of age, irrespective of previous immunization status.
- Measles vaccine can be given even to sick children. The disease will not get worse as a result of vaccination. The only time you do not give the vaccine is when you are urgently referring the child to a hospital.
- Very often, in disaster situations, the national authorities decide to immunize all children above 9 months with measles vaccine. During such situations measles outbreak is common and one of the important killers of children.

****

Step 7
Treat all children

Refer all cases with general danger signs or a sign in any of the red box. Treat all cases with a sign in yellow box with drugs and home care advice. For children in green boxes advise home care.

- **Treat 'fast breathing' or 'blood in stools' with cotrimoxazole**

Age of child	**COTRIMOXAZOLE DOSES Give 2 times daily for 5 days**
	Paediatric tablet (20 mg trimethoprim and 100 mg sulpha-methoxazole)
2 months upto 12 months	2 tablets
2 months upto 5 years	3 tablets

Cotrimoxazole and amoxicillin tablets should be crushed and mixed with food or fluid before giving to young children who can not swallow.

Facilitator will conduct Drill on drug dose

- **Treat Diarrhea with dehydration with Oral Rehydration Salt (ORS) Solution**

The child with iarrhea of less than 14 days duration who has signs of some dehydration should be treated under your supervision with ORS for 4 hours. For this, keep the mother and child under observation, either at the health centre or at the home of the child.

Teach the mother how to prepare ORS:

1. Wash your hands thoroughly with soap and water.
2. Pour all the ORS powder from a packet into a clean container.
3. Measure one litre of clean drinking water and pour it in to the container in which you poured ORS.
4. Stir until all the powder in the container has been mixed with water and none remains at the bottom of the container.
5. 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.

Ask the mother to give one teaspoon of the solution to the child. This should be repeated every 1-2 minutes (An older child who can drink it in sips should be given one sip every 1-2 minutes).

If the child vomits the ORS tell the mother to wait for 10 minutes and resume giving the ORS but this time more slowly than before. Breast fed babies should be continued to be given breast milk in between ORS. Any ORS which is left over after 24 hours should be thrown away.

Use the table below to determine the amount of ORS that should be given to the child in 4 hours.

ORS	AGE			
	Up to 4 months	4 months up to 12 months	12 months up to 2 years	2 years up to 5 years
Cups Size= 150 ml	2	3	5	7

After about 4 hours of giving ORS, reassess the child for dehydration. If the child is no longer dehydrated, tell the mother to give home available fluids the same way as she gave ORS. Details of what home available fluids to give are given in the next section. Begin feeding the child even if dehydration persists, continue ORS. If the child is still dehydrated, refer. On the way mother should continue to give ORS to the child.

Your Facilitator will conduct a drill followed by Demonstration of 'Preparation of ORS solution'

- **Treat High Fever**

Give paracetamol every 6 hours until high fever is gone

Advise extra fluids, continue feeding and advise about when to return immediately. (Not able to drink, becomes sicker)

If fever is present every day for more than 7 days, refer for assessment

Dose of Paracetamol

Age of the Child	Paracetamol (500 mg tablet)
2 months up to 12 months	1/4
12 months up to 5 years	1/3

➢ Give Chloroquine

If the child has no apparent cause of fever, treat the child for malaria with chloroquine. First make a blood film if possible.

Explain to the mother that if the child vomits within 30 minutes, she should repeat the dose and return to the clinic for additional tablets.

Dose of Chloroquine ➢ Give for 3 days.			
AGE	TABLET (150 mg base)		
	DAY 1	DAY 2	DAY 3
2 months up to 12 months	1/2	1/2	1/4
12 months up to 5 years	1	1	1/2

➢ Home care for cough or cold

- Continue exclusive breastfeeding for children up to 6 months
- Give extra fluids to older children
- If possible, give soothing remedies like warm tea.
- Teach the mother when to return immediately:
  - Child becomes sicker
  - Not able to drink or breast feed
  - Fast Breathing
  - Difficult Breathing
  - Develops a fever

➢ Home care for diarrhea no dehydration

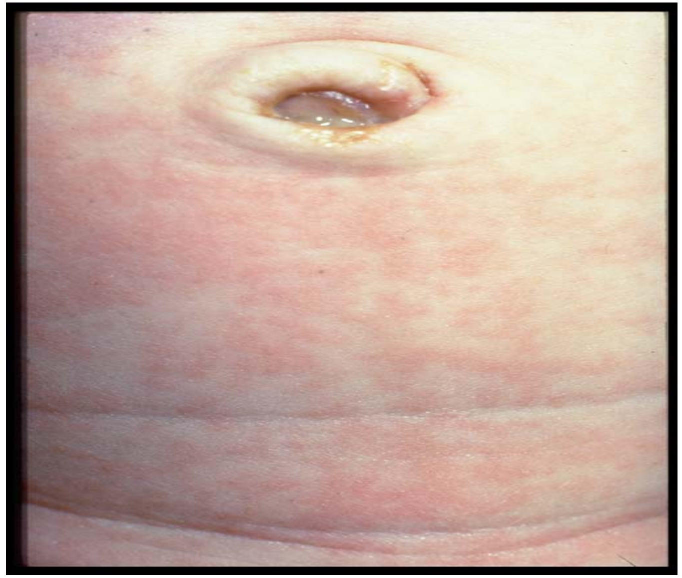
1. Give extra fluid (as much as the child will take)
Such as: ORS, yoghurt drink, vegetable soup, fruit juice, plain clean water (or other locally available fluids. For exclusively breastfed infants 6 months or less use ORS only.
2. Breast feeding frequently
3. Show the mother how much fluid to give after each stool in addition to the usual fluid intake:
-- Up to 2 years: half cup. Give more if the child wants more.
-- 2 years or more: full cup. Give more if the child wants more.
4. Continue feeding
5. When to return. Tell the mother to return to the health worker if:

- The child is not able to drink or breastfeed
- The child becomes sicker
- There is blood in stool
- The child develops a fever

Your Facilitator will conduct a Group Discussion on safe cough remedies and Home available fluids

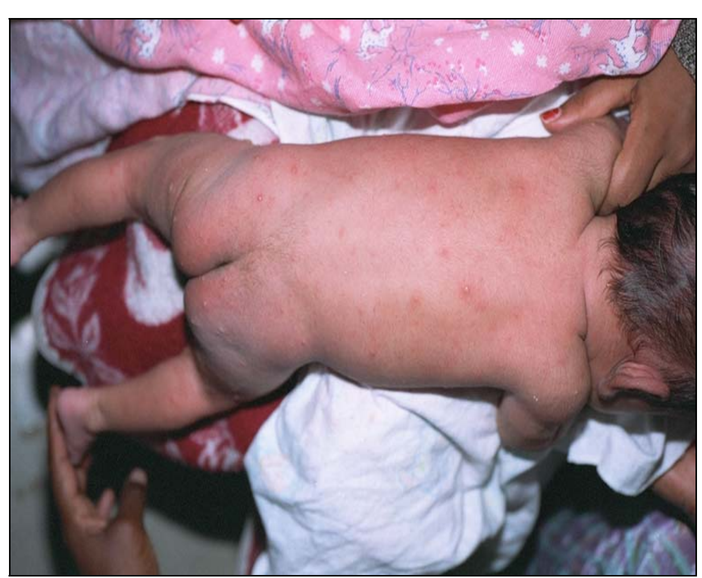
‘Photograph’

Umbilicus draining pus



‘Photograph’

Skin pustules



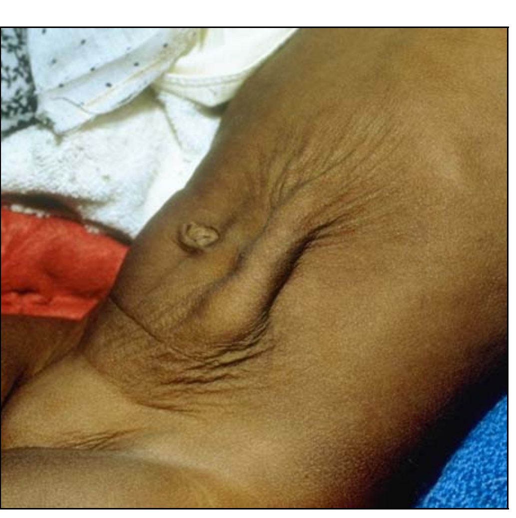
‘Photograph’

Sunken Eyes

‘Photograph’

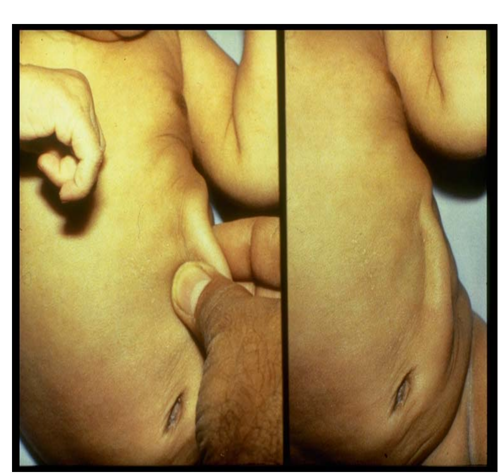
‘Photograph’

Skin pinch



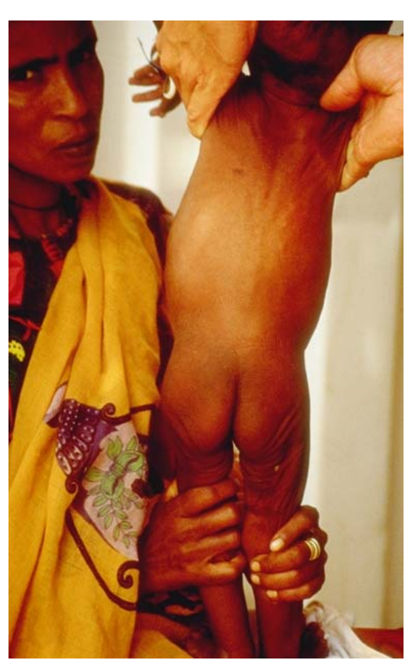
‘Photograph’

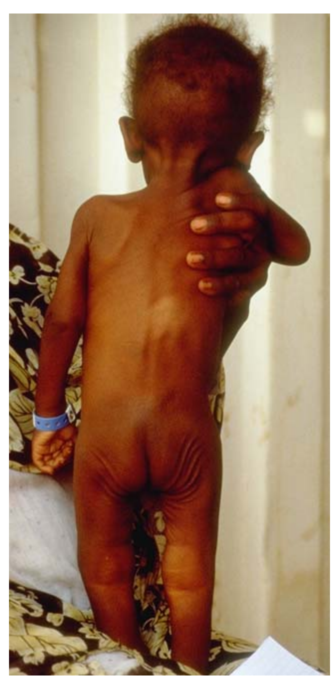
Skin pinch

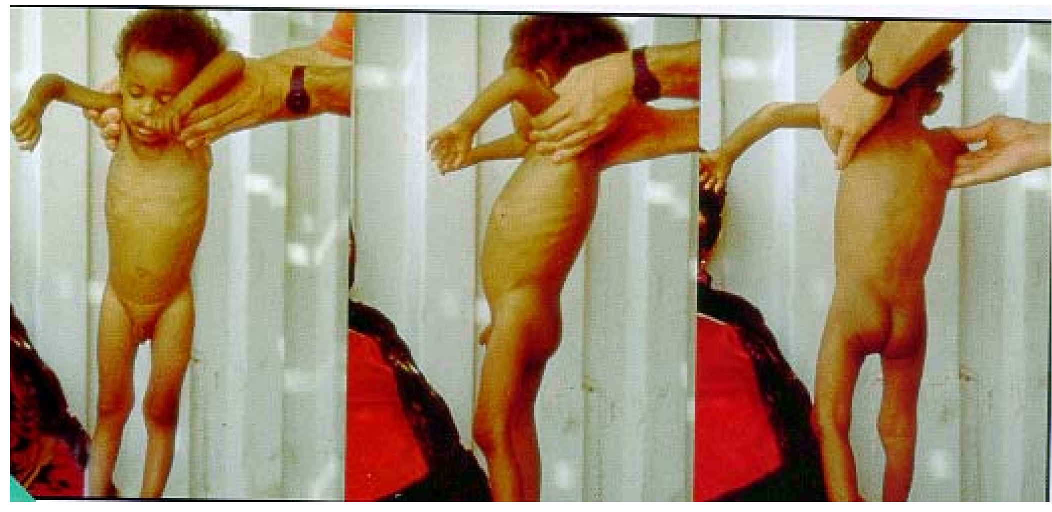


‘Photograph’

Visible Severe Wasting

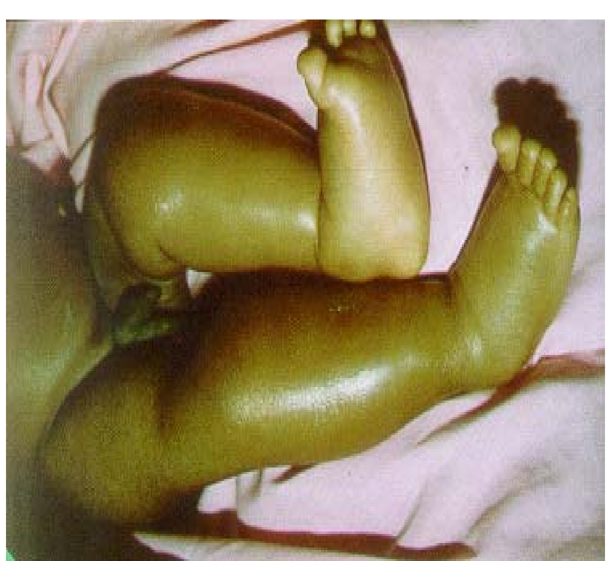


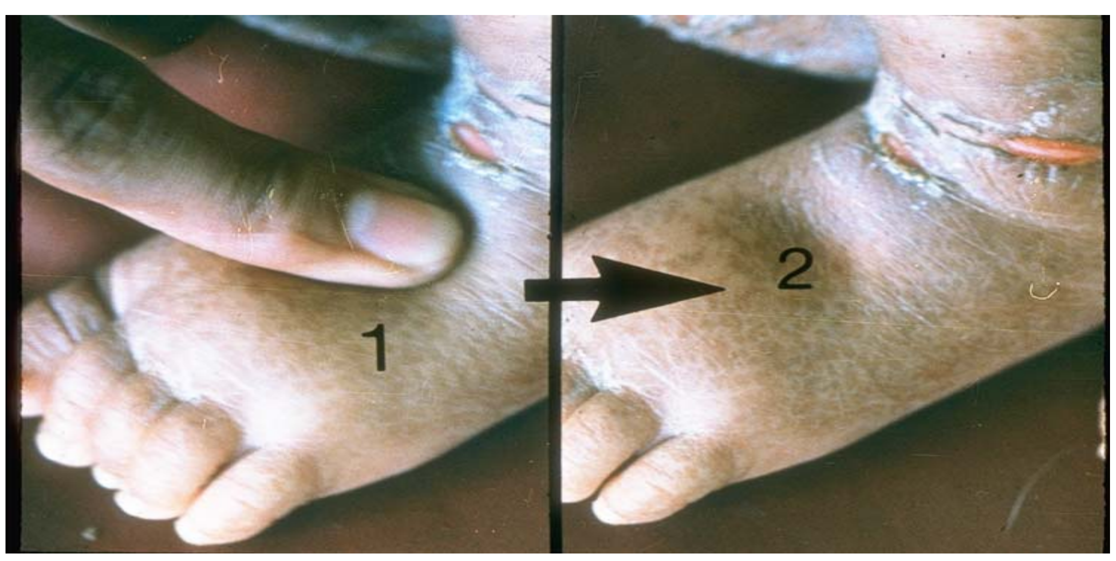




'Photograph'

Swelling both feet





Annex-1

DRUGS/SUPPLIES

Health workers need to have the following drugs/supplies to manage common health problems in children.

Drugs:

- Cotrimoxazole (Pediatric) tablets
- Choloroquine tablets
- Oral rehydration salt (ORS)
- Paracetamol tablets
- Vitamin-A solution
- Gentian Violet for topical use
- Measles vaccine (Only for trained workers)
- Syringes/needles. Auto-disable preferable.

Demonstrate sample of each drug

Additional drugs: (These drugs to be used only by a physician/trained health worker to manage children in situations where referral is not possible).

- Amoxicillin tablets
- Ciprofloxacin tablets
- Injection chloramphenicol
- Injection gentamicin

Demonstrate sample of each drug

Age of child	For Pneumonia	For Blood in Stool
	AMOXICILLIN DOSES Give 3 times daily for 3 days	**CIPROFLOXACIN Give 2 times daily for 5 days**
	Tablet (250 mg)	Tablet (250 mg)
2 months upto 12 months	½ tablet	¼ tablet
2 months upto 5 years	1 tablet	½ tablet