

## Annex 2: Assessment and treatment of diarrhoea<sup>53</sup>

### A-2.1 Assessment of diarrhoeal patients for dehydration

Table 1: Assessment of diarrhoea patients for dehydration

	A	B	C
<b>1. Look at:</b> Condition <sup>a</sup> Eyes <sup>b</sup> Thirst	Well, alert Normal Drinks normally, not thirsty	Restless, irritable Sunken Thirsty, drinks eagerly	Lethargic or unconscious Sunken Drinks poorly or not able to drink
<b>2. Feel:</b> Skin pinch <sup>c</sup>	Goes back quickly	Goes back slowly	Goes back very slowly
<b>3. Decide:</b>	The patient has no signs of dehydration	If the patient has two or more signs in B, there is some dehydration	If the patient has two or more signs in C, there is severe dehydration
<b>4. Treat:</b>	Use Treatment Plan A	Weigh the patient, if possible, and use Treatment Plan B	Weigh the patient and use Treatment Plan C Urgently

*Handwritten notes:*  
 - Next to '1. Look at:': Fluid deficit (with arrows pointing to 'Eyes' and 'Thirst')  
 - Next to '2. Feel:': % body weight (with arrows pointing to 'Skin pinch')  
 - Next to '3. Decide:': 5-10% (next to 'some dehydration'), >10% (next to 'severe dehydration')  
 - Next to '4. Treat:': 50-100mL/kg (next to 'Treatment Plan B'), >100mL/kg (next to 'Treatment Plan C')

<sup>a</sup> Being lethargic and sleepy are not the same. A lethargic child is not simply asleep; the child's mental state is dull and the child cannot be fully awakened; the child may appear to be drifting into unconsciousness.  
<sup>b</sup> In some infants and children the eyes normally appear somewhat sunken. It is helpful to ask the mother if the child's eyes are normal or more sunken than usual.  
<sup>c</sup> The skin pinch is less useful in infants or children with marasmus or kwashiorkor or in obese children.

<sup>53</sup> Department of Child and Adolescent Health and Development. The treatment of diarrhoea - a manual for physicians and other senior health workers. Geneva: World Health Organization; 2005.

## Annex 1

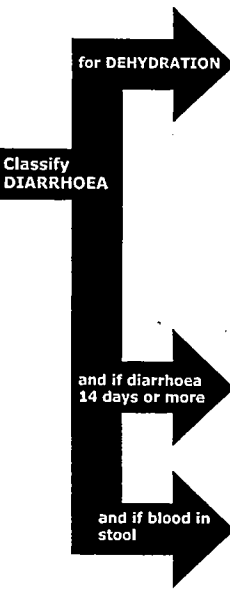
Does the child have diarrhoea?

**IF YES, ASK:**

- For how long?
- Is there blood in the stool?

**LOOK AND FEEL:**

- Look at the child's general condition. Is the child:
  - Lethargic or unconscious?
  - Restless and 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?



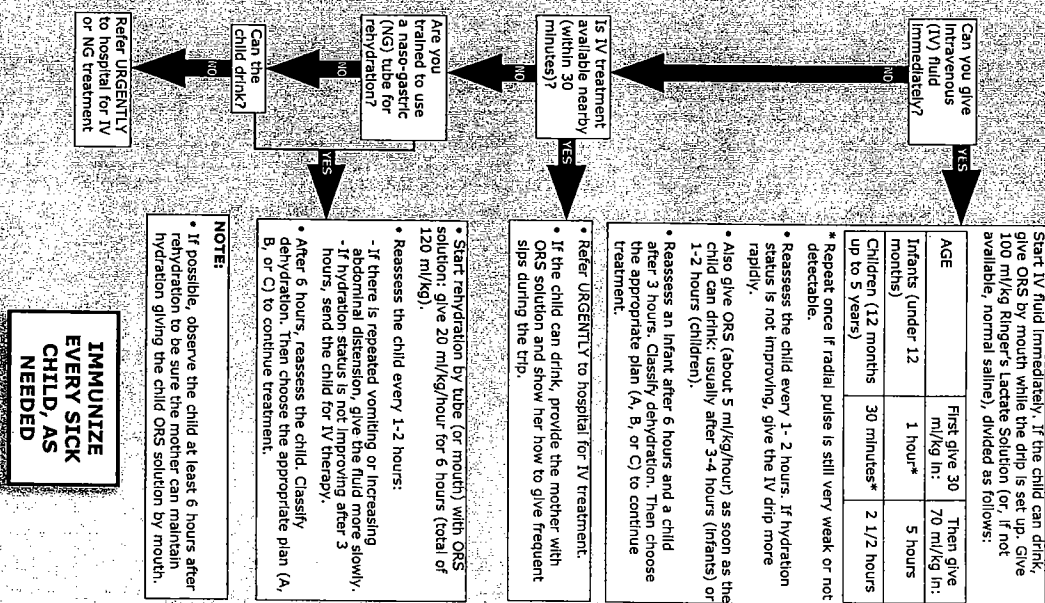
Two of the following signs: • Lethargic or unconscious • Sunken eyes • Not able to drink or drinking poorly • Skin pinch goes back very slowly.	<b>SEVERE DEHYDRATION</b>	<ul style="list-style-type: none"> <li>▶ If child has no other severe classification:                             <ul style="list-style-type: none"> <li>- Give fluid for severe dehydration (Plan C).</li> </ul> </li> <li>OR</li> <li><b>If child also has another severe classification:</b> <ul style="list-style-type: none"> <li>- Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way. Advise the mother to continue breastfeeding.</li> </ul> </li> <li>▶ If child is 2 years old or over and there is cholera in your area, give antibiotic for cholera.</li> </ul>
Two of the following signs: • Restless, irritable • Sunken eyes • Drinks eagerly, thirsty • Skin pinch goes back slowly.	<b>SOME DEHYDRATION</b>	<ul style="list-style-type: none"> <li>▶ Give fluid, zinc supplements and food for some dehydration (Plan B).</li> <li>▶ If child also has a severe classification:                             <ul style="list-style-type: none"> <li>- Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way. Advise the mother to continue breastfeeding.</li> </ul> </li> <li>▶ Advise mother when to return immediately.</li> </ul>
Not enough signs to classify as some or severe dehydration.	<b>NO DEHYDRATION</b>	<ul style="list-style-type: none"> <li>▶ Give fluid, zinc supplements and food to treat diarrhoea at home (Plan A).</li> <li>▶ Advise mother when to return immediately.</li> </ul>
• Dehydration present.	<b>SEVERE PERSISTENT DIARRHOEA</b>	<ul style="list-style-type: none"> <li>▶ Treat dehydration before referral unless the child has another severe classification.</li> <li>▶ Refer to hospital.</li> </ul>
• No dehydration.	<b>PERSISTENT DIARRHOEA</b>	<ul style="list-style-type: none"> <li>▶ Advise the mother on feeding a child who has PERSISTENT DIARRHOEA.</li> <li>▶ Give multivitamin and minerals (including zinc) for 14 days.</li> <li>▶ Follow-up in 5 days.</li> </ul>
• Blood in the stool.	<b>BLOOD IN STOOL</b>	<ul style="list-style-type: none"> <li>▶ Treat for 5 days with an oral antimicrobial recommended for Shigella in your area. Treat dehydration and give zinc</li> <li>▶ Follow-up in 2 days.</li> </ul>

## GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

(See FOOD advice on COUNSEL THE MOTHER chart on page 26)

### Plan C: Treat Severe Dehydration Quickly

> FOLLOW THE ARROWS. IF ANSWER IS "YES", GO ACROSS. IF "NO", GO DOWN.



**IMMUNIZE EVERY SICK CHILD, AS NEEDED**

## GIVE FOLLOW-UP CARE

> Care for the child who returns for follow-up using all the boxes that match the child's previous classifications.

> If the child has any new problem, assess, classify and treat the new problem as on the ASSESS AND CLASSIFY chart.

<p>&gt; PNEUMONIA</p> <p>After 2 days:</p> <p>Check the child for general danger signs. } See ASSESS and CLASSIFY chart</p> <p>Assess the child for cough or difficult breathing. }</p> <p>ASK:</p> <p>- Is the child breathing slower?    - Is there less fever?    - Is the child eating better?</p> <p>Treatment:</p> <p>&gt; If chest indrawing or a general danger sign, give a dose of second-line antimicrobial or intramuscular chloramphenicol. Then refer URGENTLY to hospital.</p> <p>&gt; If breathing rate, fever and eating are the same, change to the second-line antimicrobial and advise the mother to return in 2 days or refer. (If this child had measles within the last 3 months refer.)</p>	<p>&gt; PERSISTENT DIARRHOEA</p> <p>After 5 days:</p> <p>ASK:</p> <p>- Has the diarrhoea stopped?</p> <p>- How many loose stools is the child having per day?</p> <p>Treatment:</p> <p>&gt; If the diarrhoea has not stopped (child is still having 3 or more loose stools per day), do a full reassessment of the child. Give any treatment needed. Then refer to hospital.</p> <p>&gt; If the diarrhoea has stopped (child having less than 3 loose stools per day), tell the mother to follow the usual feeding recommendations for the child's age.</p>
<p>&gt; BLOOD IN STOOL</p> <p>After 2 days:</p> <p>Assess the child for diarrhoea. &gt; See ASSESS &amp; CLASSIFY chart.</p> <p>ASK:</p> <p>- Are there fewer stools?    - Is there less abdominal pain?    - Is there less fever?</p> <p>- Is there less blood in the stool?    - Is the child eating better?</p> <p>Treatment:</p> <p>&gt; If the child is dehydrated, treat dehydration.</p> <p>&gt; Continue giving zinc supplements for 14 days.</p> <p>&gt; If number of stools, amount of blood in stools, fever, abdominal pain, or eating is the same or worse, refer to hospital.</p> <p>&gt; If fewer stools, less blood in the stools, less fever, less abdominal pain, and eating better, continue giving the same antibiotic until finished.</p>	<p>&gt; FEVER</p> <p>If fever persists after 2 days:</p> <p>Do full reassessment of the child &gt; See ASSESS &amp; CLASSIFY chart</p> <p>Assess for other causes of fever</p> <p>Treatment:</p> <p>&gt; If the child has any general danger signs or stiff neck, treat as VERY SEVERE FEBRILE DISEASE.</p> <p>&gt; If the child has any apparent cause of fever, provide treatment.</p> <p>&gt; If fever has been present for 5 days, refer for assessment.</p> <p>&gt; If there is no apparent cause of fever and it has not been present for 5 days, advise mother to return in 2 days if fever persists. Make sure that the child is given increased amounts of fluid and offered food.</p>

## ANNEX 7: ANTIMICROBIALS USED TO TREAT SPECIFIC CAUSES OF DIARRHOEA

Cause	Antibiotic(s) of choice <sup>(a)</sup>	Alternative(s)
Cholera <sup>b,c</sup>	<b>Doxycycline</b> Adults: 300 mg once or <b>Tetracycline</b> Children: 12.5 mg/kg 4 times a day x 3 days Adults: 500 mg 4 times a day x 3 days	<b>Erythromycin</b> Children: 12.5 mg/kg 4 times a day x 3 days Adults: 250 mg 4 times a day x 3 days
	<b>Shigella dysentery <sup>b</sup></b> Children: 15 mg/kg 2 times a day x 3 days Adults: 500 mg 2 times a day x 3 days	<b>Ciprofloxacin</b> Children: 15 mg/kg 2 times a day x 3 days Adults: 500 mg 2 times a day x 3 days
Amoebiasis	<b>Metronidazole</b> Children: 10 mg/kg 3 times a day x 5 days (10 days for severe disease) Adults: 750 mg 3 times a day x 5 days (10 days for severe disease)	
Giardiasis	<b>Metronidazole <sup>d</sup></b> Children: 5 mg/kg 3 times a day x 5 days Adults: 250 mg 3 times a day x 5 days	

<sup>a</sup> All doses shown are for oral administration. If drugs are not available in liquid form for use in young children, it may be necessary to use tablets and estimate the doses given in this table.

<sup>b</sup> Selection of an antimicrobial should be based on sensitivity patterns of strains of *Vibrio cholerae* O1 or O139, or *Shigella* recently isolated in the area.

<sup>c</sup> An antimicrobial is recommended for patients older than 2 years with suspected cholera and severe dehydration.

<sup>d</sup> Tinidazole can also be given in a single dose (50 mg/kg orally; maximum dose 2 g). Ornidazole can be used in accordance with the manufacturers' recommendations.

### GENERAL INFORMATION

Rehydration Project  
<http://rehydrate.org>

### POSITION PAPERS

Clinical management of acute diarrhea (WHO/Unicef joint statement)  
[http://whqlibdoc.who.int/hq/2004/WHO\\_FCH\\_CAH\\_04.7.pdf](http://whqlibdoc.who.int/hq/2004/WHO_FCH_CAH_04.7.pdf)

### CLINICAL GUIDELINES

The treatment of diarrhea: a manual for physicians and other senior health workers (WHO)  
<http://whqlibdoc.who.int/publications/2005/9241593180.pdf>  
 Diarrhea treatment guidelines: including new recommendations for the use of ORS and zinc supplementation for clinic-based healthcare workers (MOST: The USAID Micronutrient Program/WHO)  
[http://www.mostproject.org/ZINC/Zinc\\_Updates\\_Apr05/Diarrhoeaguidelines.pdf](http://www.mostproject.org/ZINC/Zinc_Updates_Apr05/Diarrhoeaguidelines.pdf)  
 Clinical guidelines: diagnosis and treatment manual for curative programmes in hospitals and dispensaries (MSF)  
[http://www.refbooks.msf.org/msf\\_docs/en/Clinical\\_Guide/CG\\_en.pdf](http://www.refbooks.msf.org/msf_docs/en/Clinical_Guide/CG_en.pdf)

### EVIDENCE

Bhutta ZA et al. Prevention of diarrhea and pneumonia by zinc supplementation in children in developing countries: pooled analysis of randomized controlled trials. Zinc Investigators' Collaborative Group. *J Pediatr*, 1999; 135:689-97.  
 Zinc Investigators Collaborative Group. Therapeutic effects of oral zinc in acute and persistent diarrhea in children in developing countries: pooled analysis of randomized controlled trials. *Am J Clin Nutr*, 2000; 72:1516-22.  
 Hahn SK, Kim YJ, Garner P. Reduced osmolarity oral rehydration solution for treating dehydration due to diarrhoea in children: systematic review. *British Medical Journal*, 2001; 323: 81-5.

## Annex 2

### GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

(See FOOD advice on COUNSEL THE MOTHER chart on page 26)

#### Plan A: Treat Diarrhoea at Home

Counsel the mother on the 4 Rules of Home Treatment:

**Give Extra Fluid, Give Zinc Supplements, 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, 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 and between them

2 years or more → 100 to 200 ml after each loose stool and between them

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) GIVE ZINC SUPPLEMENTS

> TELL THE MOTHER HOW MUCH ZINC TO GIVE:

Up to 6 months → 1/2 tablet per day for 14 days

6 months or more → 1 tablet per day for 14 days

> SHOW THE MOTHER HOW TO GIVE ZINC SUPPLEMENTS

Infants → dissolve the tablet in a small amount of expressed breastmilk, ORS or clean water, in a small cup or spoon

Older children → tablets can be chewed or dissolved in a small amount of clean water in a cup or spoon

> REMIND THE MOTHER TO GIVE THE ZINC SUPPLEMENTS FOR THE FULL 14 DAYS

3) CONTINUE FEEDING } See COUNSEL THE MOTHER chart on page 26

4) WHEN TO RETURN }

### GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

(See FOOD advice on COUNSEL THE MOTHER chart on page 26)

#### 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 4 Rules of Home Treatment:

- 1) GIVE EXTRA FLUID
  - 2) GIVE ZINC SUPPLEMENTS
  - 3) CONTINUE FEEDING
  - 4) WHEN TO RETURN
- } See Plan A for recommended fluids and  
See COUNSEL THE MOTHER chart on page 26