

**Guidelines for New Diarrhea  
Treatment Protocols  
for Community-Based Healthcare Workers**

*Not yet field-tested*



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## Introduction

There are two new exciting changes to current guidelines for treating diarrhea in children:

**New and improved Oral Rehydration Solution (ORS)** to prevent dehydration and the need for intravenous therapy

**Zinc Supplementation** to decrease the duration and severity of diarrhea and the likelihood of future diarrhea episodes in the 2-3 months following supplementation

As a community-based health care worker YOU are a vital part of improved diarrhea management. With the new tools described in this guide you will be well prepared to help mothers treat a child with diarrhea. In addition this guide will help you know when to refer children with more severe diarrhea and dehydration.

## Overview of Diarrhea

### 1. Diarrhea

- ▲ In many societies, diarrhea is 3 or more loose or watery stools (stools containing more water than normal) in a day
- ▲ Mothers usually know when their children have diarrhea. The mother knows how many stools per day the child usually has. If a child has diarrhea, the mother will notice that the child will have more stools than usual throughout the day.
- ▲ Stools may also contain blood, in which case the diarrhea is called dysentery.
- ▲ Diarrhea is common in children, especially those between 6 months and 2 years of age. It is also common in babies under 6 months who are drinking cow's milk or infant feeding formula.
- ▲ When diarrhea occurs stools may smell strong or pass noisily, as well as being loose and watery.

- ▲ Frequent passing of normal stools is not diarrhea. Babies who are breastfed often have stools that are soft; this is not diarrhea. The mother of a breastfed baby can recognize diarrhea because the consistency or frequency of the stools is different than normal.

## 2. Why is diarrhea dangerous?

- ▲ **Loss of body fluids:** The loss of a more than usual amount of water and salts from the body results in dehydration. It occurs when the output of water and salts is greater than the input. The more diarrhea stools a child passes, the more water and salts he /she loses. Dehydration can also be caused by a lot of vomiting, which often accompanies diarrhea. Dehydration during diarrhea is very serious and is a leading cause of child death around the world.
- ▲ **Loss of nutrients:** Nutrients are lost from the body during diarrhea. Diarrhea can cause malnutrition which becomes worse if a mother does not feed her child while he/she has diarrhea.

## **The Role of the Community-Based Health Care Worker in Diarrhea Management**

**C**hildren with diarrhea are often sick with simple acute diarrhea. Simple cases of diarrhea (those with some dehydration) can be treated at home (see below).

As you read this section, look at the chart in Annex 1.

### **Assessment of the child with diarrhea**

Assessment of the child with diarrhea can be done by looking for key clinical signs to determine the level of dehydration of the child and the appropriate treatment to begin. Recognizing the clinical signs of severe dehydration is extremely important.

### **Ask, look and feel for signs of dehydration or other problems**

ASK:

Does the child have more stools than usual?

Does the child have three or more stools per day?

If yes to either, continue with the following —

ASK:

How long has the child had diarrhea?

Is there blood in the stool?

Is there vomiting?

LOOK:

What is the child's general condition?

Is he/she well and alert?

Is he/she restless or irritable?

When offered a drink, is the child able to drink? If so, does he/she drink eagerly, thirstily?

Is he/she very sleepy or unconscious?

Is he/she severely malnourished?

Are his/her eyes normal or sunken?

Pinch the skin of the abdomen or thigh. Does it go back slowly?

### **Decide how to treat**

**Refer urgently to the clinic/health center** if the child has 2 or more of the following signs of **SEVERE dehydration**:

- ▲ Very sleepy or unconscious
- ▲ Has sunken eyes
- ▲ Not able to drink or drinking very poorly
- ▲ When pinched, skin goes back to normal very slowly (longer than 2 seconds)

**Refer to the clinic/health center** if the child has 2 or more of the following signs of **SOME dehydration**:

- ▲ Restless/irritable
- ▲ Sunken eyes
- ▲ Drinks eagerly/thirsty
- ▲ When pinched, skin goes back slowly (1 second)

**Refer to the clinic/health center** if the child has had

- ▲ Diarrhea for more than 14 days.
- ▲ Blood in the stool



***When the child is referred to the Health Center, you can help by:***

- ▲ Telling the mother to keep the child warm during the trip
- ▲ Advising the mother to continue and increase breastfeeding
- ▲ Providing the mother with Oral Rehydration Solution and counseling to give the child sips on the way

***When the child is brought home, you can help by:***

- ▲ Guiding the mother in administering the home treatment described below
- ▲ Monitoring the child
- ▲ Instructing the mother to take the child back to the clinic/ health center, if the child does not improve in three days

## Home Treatment for Diarrhea

If the child has diarrhea but NONE of the danger signs of dehydration listed above, the child can be treated at home, as follows:

### 1. *Prevention of dehydration*

- ▲ ORS continues to be the best way to prevent and manage dehydration. Give the recommended home fluids or ORS (see below), or give available food-based fluids, such as gruel, soup or rice-water.
- ▲ Increase the frequency of breastfeeding, or give milk feeds prepared with twice the usual amount of water.
- ▲ Continue to feed the child. Give an *additional* small meal per day for several days.
- ▲ Zinc supplementation is now recognized as the best way to reduce the length and severity of diarrhea. Because fluid replacement is critical, zinc should NEVER take the place of ORS. Zinc supplementation should be for 10/14 days \* (see below) in the recommended dose for the child's age. Give the first tablet to the child, demonstrating to the mother how to dissolve it in water or breastmilk. These tablets can also be chewed if the child is old enough.

Things to remember during home treatment of diarrhea

- ▲ Different types of fluids or solutions may be used to prevent dehydration. They are dependant on:
  - » local traditions for treatment of diarrhea
  - » availability of suitable food-based fluids (rice water, soups gruels, etc.)
  - » availability of salt and sugar for making home recipe
  - » availability of oral re-hydration salts (ORS)
- ▲ If the child does not seem to improve within three days, tell the mother to go to the health clinic immediately.

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\* Some manufacturers produce 10-day packs while others produce 14-day packs. See Annex 3 for more information and suggestions.

## 2. *Treatment guidelines*

**Oral Rehydration Solution** is still the most important part of diarrhea management. Both new and old versions of ORS are prepared the same way.

Preparation: One packet mixed in 1 L clean water

Dose: Liberally given to the child to replace fluid loss up to 20ml/kg body weight per hour

Administration: Infants — by clean dropper or syringe (no needle); Children under 2 — by spoon every 12 minutes; Older children — by cup, frequent small sips. Avoid bottles and nipples.

Side Effects: Vomiting may occur if given too quickly. If vomiting occurs, wait 5-10 minutes and begin ORS again.

**Zinc Supplementation** is now recommended for all children with diarrhea.

Dose: 20mg/day for children 6 months of age or older (1 tablet); 10mg/day for infants less than 6 months of age (1/2 tablet)

Duration: 10/14 days even if diarrhea has stopped.

Supplement: Dispersible (dissolvable) tablets and syrups (in some countries)

Administration: Tablets can be chewed or dissolved in clean water, ORS, or breastmilk.

Side Effects: Vomiting is common in diarrhea and sometimes children vomit after taking a zinc supplement. Unless vomiting is severe this should not prevent administration of the zinc supplement.

**Homemade sugar-salt solution.** If the policy in your country permits community-based workers to suggest a homemade alternative to oral rehydration solution, the procedure below is an example of an easy, general recipe.

**Preparation:** Wash hands and a container with soap and clean water. To a half-liter of clean water, add a “pinch” of salt (using 3 fingers to make a “pinch”) and a “fistful” of sugar. Stir the water with a clean spoon. Taste the prepared solution. Correctly prepared solution tastes like tears.

**Dose:** Liberally given to the child to replace fluid loss up to 20ml/kg body weight per hour

**Administration:** Infants — by clean dropper or syringe (no needle); Children under 2 — by spoon every 12 minutes; Older children — by cup, frequent small sips. Avoid bottles and nipples.

**Storage:** Solution can be left at room temperature for up to 6 hours, in a covered container. If left at room temperature for longer than this, it should be discarded and a new solution should be prepared.

### ***3. Child Feeding during Diarrhea***

- ▲ The child should be offered small amounts of nutritious, easily digestible food frequently.
- ▲ Feeding during a diarrhea episode provides nutrients the child needs to increase strength and prevent weight loss during the illness.
- ▲ Fluids given to the child do not replace the need for food. After the diarrhea has stopped, an extra meal each day for a week will help the child regain weight lost during the illness.

#### *4. Special notes*

**Adult diarrhea.** Although this document discusses treating children, the same treatment is also good for adults with diarrhea.

**Antibiotics.** Antibiotics are not needed for most diarrhea cases and should be discouraged. If a child has blood in the stool or if for any reason he/she may need an antibiotic, you should refer the child to a health center immediately.

## **Teaching Parents About Home-Based Treatment**

Most children with diarrhea will be successfully treated at home as long as dehydration is not present. You must teach the mother how to use ORS, how to use zinc, and how to recognize danger signs, and when to take the child to the clinic.

### ***ORS Therapy***

1. Explain that the child is losing a lot of fluid and it must be replaced.
  - » ORS will replace lost fluid
  - » ORS will keep the child from becoming dehydrated
2. Demonstrate how to prepare ORS.
3. Explain that ORS should be given liberally while the child has diarrhea and extra liquids should be given after each stool is passed.
4. Know local ORS alternatives (local ORT recipes) and be able to demonstrate. This is important if ORS is not available or costs too much for the mother. ORS should be recommended for the dehydrated child.
5. Explain not to stop ORS until the child has no more signs of diarrhea.
6. Remind mother about the importance of continued feeding (including breastfeeding).

### ***Zinc supplementation***

1. Explain that the child should take zinc to help stop the diarrhea.
  - » Zinc will shorten the time and lessen the severity of the diarrhea
  - » Zinc will help the child fight off diarrhea and pneumonia for 2-3 months.
  - » Zinc will improve appetite and growth.

2. Explain the dose to the mother
  - » Children less than 6 months of age receive ½ tablet 1 time per day for 10/14 days.
  - » Children 6 months to 5 years receive 1 tablet 1 time per day for 10/14 days.
3. Show the mother how to give the zinc tablet to the child.
  - » For 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 small cup.

NOTE: If mother is scared or uncertain, and you have enough zinc you may offer to let her taste one so she is less scared about giving the supplement to her baby.
4. Remind the mother that the child should get all 10/14 tablets even if the diarrhea ends in a few days.
  - » Again tell the mother that zinc will improve the overall health, growth, and appetite of the child.
  - » Remind her to give only to this child for this episode of diarrhea and not save it for other children or other illnesses.
5. Answer any questions the mother might have.

### ***Encouraging Eating and Drinking***

1. Encourage a lot of liquids during diarrhea.
2. Explain the need to continue to provide the child with good food based on local acceptance and availability.
3. ALWAYS encourage breastfeeding for as much and as often as the baby wants. If the child drinks animal milk it can be continued as normal.

4. The following liquids are appropriate to provide during diarrhea.

<b>GOOD LIQUIDS WITHOUT SALT</b>	<b>GOOD LIQUIDS WITH SALT</b>
Clean Water	ORS
Unsalted rice water	Salted Soup
Unsalted yoghurt drink	Salted yogurt drink
Green coconut water	Salted rice water
Weak tea	
Unsweetened fresh fruit juice	

5. Remind mothers what liquids NOT to give.

<b>DO NOT GIVE</b>
Soft drinks
Sweetened tea
Sweetened fruit drinks
Coffee
Some medicinal teas or infusions

**When to take her child to the clinic.** Mothers should go immediately to the clinic if the child. . .

- ▲ Does not improve in 3 days
- ▲ Has an increase in the number of stools
- ▲ Begins to have very watery or bloody stools
- ▲ Has severe vomiting
- ▲ Develops a high fever
- ▲ Has a marked thirst or begins eating or drinking poorly
- ▲ Has a decrease in alertness or consciousness



# Annex 1

## Does the child have diarrhoea?

- Is the stool more watery than usual?
- Are there 3 or more loose or watery stools a day?

### If **yes**

#### ASK:

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

#### 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, thirstily?
- Pinch the skin of the abdomen. Does it go back:
  - Very slowly (longer than 2 seconds)?
  - Slowly?

Two of the following signs: <ul style="list-style-type: none"> <li>• Lethargic or unconscious</li> <li>• Sunken eyes</li> <li>• Not able to drink or drinking poorly</li> <li>• Skin pinch goes back very slowly.</li> </ul>	<b>SEVERE DEHYDRATION</b>	Refer <b>URGENTLY</b> to health clinic with mother giving frequent sips of fluid on the way. Advise the mother to continue breastfeeding.
Two of the following signs: <ul style="list-style-type: none"> <li>• Restless, irritable</li> <li>• Sunken eyes</li> <li>• Drinks eagerly, thirsty</li> <li>• Skin pinch goes back slowly.</li> </ul>	<b>SOME DEHYDRATION</b>	Refer to health clinic with mother giving frequent sips of fluid on the way. Advise the mother to continue breastfeeding. Give fluid, zinc supplements and food. Monitor for improvement
Not enough signs to classify as some or severe dehydration.	<b>NO DEHYDRATION</b>	Give fluid, zinc supplements and food to treat diarrhoea at home.
AND Dehydration present	<b>SEVERE PERSISTENT DIARRHOEA</b>	Refer <b>URGENTLY</b> to health clinic with mother giving frequent sips of fluid on the way and continuing breastfeeding.
AND No dehydration	<b>PERSISTENT DIARRHOEA</b>	Refer to health clinic.
Blood in the stool	<b>DYSENTERY</b>	Refer to health clinic.



## **Annex 2**

### **Frequently Asked Questions**

Zinc supplements are a new treatment for diarrhea so mothers may have many questions. Knowing the answer to common questions will help you calm fears and address issues.

#### **Zinc and ORS**

Q: Can I give zinc and ORS at the same time?

A: Yes, zinc and ORS can be and should be given at the same time while your child has diarrhea. Zinc is given once a day and can be given with ORS. Give the zinc at a time of day that is easy for you to remember and repeat every day until all zinc tablets are gone. ORS needs to be given throughout the day while your child has loose stools.

Q: Should I give less ORS since I am giving zinc?

A: No, you should continue to give ORS liberally even though you are giving zinc. Zinc helps reduce the diarrhea, but does not help prevent your child from losing too many fluids. The ORS is important to help your child not lose too much fluid.

#### **Length of time to use zinc**

Q: Why do I give zinc after my child is better?

A: Zinc is good for your child while he/she is sick, but it is important to give to your child after he is better too. The zinc will help your child grow and will improve his/her appetite. Remember, even though your child does not have loose stools, he/she will still need to take the zinc AND eat and drink a lot for 2 weeks, all of this will help replace lost nutrients. Zinc will help your child not get diarrhea again soon.

## **Vomiting**

Q: If my child vomits the zinc should I give another one?

A: Yes, try to give the child one more tablet. Wait until he/she is calm again and not vomiting. Make sure your child is not vomiting ORS. When he/she takes ORS with no problems, give the next zinc tablet. If he/she vomits after the second tablet do not give anymore on that day, wait to give the next tablet until the next day. Give zinc again the next day and daily until there are no more tablets in the pack.

Q: If my child is vomiting other things, like ORS, should I try to give the child zinc?

A: No, if your child is vomiting ORS and all food and other liquids you should bring him/her to the health center.

## **Side effects**

Q: Can zinc have any bad side effects?

A: The only side effect of zinc supplementation is sometimes vomiting. You should not expect any other side effects. As always, go to the health center if your child has any danger signs with or without the zinc supplements.

Q: I think tablets are bad for babies, what do I do?

A: This tablet should be dissolved in breastmilk, ORS, or clean water. When you do that you will make a small syrup to give to your baby. Babies like this very much, especially in breastmilk.

Q: What if my child takes more than one tablet?

A: You should keep the tablets away from any children in the house to prevent this from happening. If your child takes

too many tablets he/she will probably vomit them up. Your child should take 1 per day. One or two extra taken by mistake will likely not hurt your child, but you should come to the clinic and discuss what happened with a health care worker, just to be safe.

Q: Are vitamins/minerals harmful for my child who has a bad stomach?

A: No, vitamins and minerals are very important while your child is sick and will help your child get better faster. You should give the zinc to your child even though his stomach is bad.

Q: I give a multivitamin to my child; can I give zinc on top of that?

A: Yes, your child is losing a lot of zinc in his stools right now, so giving more than usual zinc is good while he/she is sick. After the diarrhea is over it will help replace lost nutrients. You can continue to give the multivitamin and give the zinc as diarrhea treatment for the full 10/14 days. This will not harm your child.

### **Other Medicines**

Q: Can zinc be given with other medicines?

A: Yes, zinc is OK to be given with other medicines. Only give your child medicines that are prescribed at the clinic [or by a community health care worker].

Q: Should I get an antibiotic for the diarrhea?

A: Only children with bloody diarrhea need antibiotics. If you start to see blood in your child's stool, bring him/her to a healthcare center for further assessment and treatment.

### **Persistent Diarrhea**

Q: What do I do if my child does not get better? Could this be because of the zinc?

A: If your child does not improve continue to give the zinc. If your child does not get better that is not because of the zinc, but some other reason. If he/she is not improved in 3 days, take him/her to the health center. Also, go to the health center if at any time he/she shows any danger signs.

### **Blood in the stools**

Q: Can I give zinc if my child has blood in the stools?

A: Yes, zinc can be given if your child has bloody stools. If your child develops bloody stools, you should go to the health center for more medicine. Your child will need an antibiotic.

### **Feeding**

Q: Should I feed my child as usual?

A: Yes, continue to feed your child and offer an extra meal per day for several days. If your child will eat more than usual, allow him/her to do that. Increased foods will help him/her. Do not restrict eating.

Q: Should I give breastmilk?

A: Yes, allow your baby to breastfeed as much as he/she wants. This might be more than usual and that is good. Allow your child to eat as many times as he/she wants for as long as he/she wants.

Q: Does breastmilk cause diarrhea?

A: No, breastmilk is not the cause of diarrhea. Keep breastfeeding your child. Breastfeeding can prevent diarrhea. Babies under 6 months of age should get only breastmilk to prevent diarrhea.

Q: Can I still give my child milk?

A: Yes, if your child already drinks cow's milk, you can keep giving this to him/her. Be sure to also give lots of ORS and plain clean water as well.

## **Annex 3**

### **Potential Local Adaptations**

#### **Supplement Availability**

##### *Ten or fourteen days*

The WHO recommendation found in the publication, “The treatment of diarrhoea — a manual for physicians and other senior health workers,” is for a 14-day dose of zinc. However, some manufacturers may produce a 10-day tablet pack to be promoted in a local or country-wide setting. To account for each scenario in this document, the dose is designated as 10/14 and should be read as one or the other, in concordance with the local product and policy.

##### *Tablets and/or syrup*

The most convenient delivery system for zinc treatment is a dispersible tablet. Currently, there is only one producer which has such a tablet available, meeting international product standards. Efforts will be made to encourage other producers. However, there might be other zinc products locally available in either tablet or syrup form. These products may or may not meet minimum standards. Promotion of zinc products should be based upon quality assurance and product safety and must be reviewed at the national and/or local level.

#### **Local Food and Drink**

Foods and fluids during diarrhoea are very important. The lists provided in this manual are meant to serve as a guide and can not include all appropriate food and beverages for all local situations around the world. Food and drink vary from country to country and region to region. The health worker is expected to be able to use these lists as a guide to develop his/her local version of these suggestions, taking into consideration availability, accessibility, and acceptability by mothers during diarrhoea episodes.