

Diarrhoea Treatment Guidelines

Including new recommendations
for the use of ORS and zinc supplementation

for Clinic-Based Healthcare Workers

Not yet field-tested



This publication was made possible through support provided by the Center for Population, Health and Nutrition of the Bureau for Global Programs, Field Support and Research of the U.S. Agency for International Development (USAID).

MOST is managed by the International Science and Technology Institute, Inc. (ISTI) under the terms of Cooperative Agreement No. HRN-A-00-98-0047-00. Partners are the Academy for Educational Development (AED), Helen Keller International (HKI), the International Food Policy Research Institute (IFPRI), and Johns Hopkins University (JHU). Resource institutions are CARE, the International Executive Service Corps (IESC), Population Services International (PSI), Program for Appropriate Technology in Health (PATH), and Save the Children.

The opinions expressed in this document are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

January 2005

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These guidelines are designed to prepare clinic-based health workers to implement the new WHO/UNICEF recommendations for the use of ORS and zinc supplementation in the clinical management of diarrhoea. The information is meant to complement, not replace, more comprehensive policy guidance available from WHO on the management of diarrhoea. The guidelines presented here are generic, that is, they will be most effective when modified to support the particular strategy being used to introduce the new recommendations in each country.

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Preface

The need for guidance on how to implement the new WHO/UNICEF recommendations for the use of ORS and zinc supplementation in the clinical management of diarrhoea was articulated at a meeting at Johns Hopkins University in June, 2004. On behalf of USAID, MOST initiated the effort to prepare the needed guidance in anticipation of the introduction of zinc supplementation into the protocol for treating diarrhoea in several countries.

These guidelines are designed to prepare clinic-based health workers to implement the new recommendations. The information is meant to complement, not replace, more comprehensive policy guidance available from WHO on the management of diarrhoea. The guidelines presented in this document are generic, that is, they will be most effective when modified to support the particular strategy being used to introduce the new recommendations in each country.

Both WHO and UNICEF have reviewed and endorsed these guidelines. This version is to be field-tested and subsequently revised and reproduced in a finalized form.

MOST wishes to acknowledge the major contribution of Christa Fischer Walker, a graduate student at Johns Hopkins University, to completing the first draft of the guidelines. MOST would also like to thank Olivier Fontaine at WHO and Nancy Terreri at UNICEF for their highly valued suggestions and revisions to these guidelines.

MOST Headquarters
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January 2005

Introduction

Diarrhoea remains a leading cause of child death around the world. Two recent advances in managing diarrhoeal disease can drastically reduce the number of child deaths:

- 1) Newly formulated Oral Rehydration Salts (ORS) solution, containing lower concentrations of glucose and salts, to prevent dehydration and the need for intravenous therapy
- 2) Zinc supplementation to decrease the duration and severity of diarrhoea and the likelihood of future diarrhoea episodes in the 2-3 months following supplementation

Changes being made

ORS has been an important part of diarrhoea management for over 25 years, keeping millions of children from unnecessary dehydration and subsequent death as a result of diarrhoea. The new formula for ORS has been scientifically proven to be more efficacious than the old one, and is now the formula recommended by WHO and UNICEF. Packets of the new ORS are being produced by UNICEF for global distribution and local manufacturers are encouraged to produce only this new formula.

Zinc supplementation is a new addition to the diarrhoea treatment strategy and one that promises to greatly improve diarrhoea management. Zinc supplementation is now being recommended by WHO, UNICEF, and countries around the world for the treatment of all diarrhoea episodes among children. Treatment guidelines published by WHO, including the guidelines for the Integrated Management of Childhood Illness (IMCI) are being modified to include these new findings and will be available shortly.

Purpose of this guide

As a clinic-based healthcare worker YOU are an essential element in the promotion and implementation of improved diarrhoea management. With the information provided in this document you will be well prepared to implement in your clinic these changes in the management of diarrhoea. This document aims to emphasize the role of increased fluids, including ORS solution, and continued feeding, and to introduce the use of zinc supplementation as part of the comprehensive treatment of diarrhoea. In addition, this document urges you to counsel caregivers on the ways of preventing future diarrhoea.

Structure of the guide

This document is divided in four parts plus a series of annexes:

- 1) Overview of the management of diarrhoea: This section reviews the basics of diarrhoea assessment and the use of ORS, home fluids and continued feeding for diarrhoea management. This section also introduces the inclusion of zinc supplementation as treatment for diarrhoea by providing technical information about the dose, duration, and administration. Finally, the key means of preventing diarrhoea are introduced, namely: exclusive breastfeeding for infants less than 6 months of age, introduction of nutritious and hygienic complementary foods along with continued breastfeeding through the second year of life, use of safe water, handwashing, use of latrines, proper disposal of faeces, and measles immunization.
- 2) Assess the child with diarrhoea: This section reviews the steps to assess the clinical status of a child with diarrhoea.
- 3) Treat diarrhoea: This section reviews in detail the management of a child with diarrhoea in the health facility.
- 4) Home-based treatment of diarrhoea: This section describes the four rules for treating diarrhoea at home.

5) Annexes —

Annex 1: Table entitled “Does the child have diarrhoea?”

Annex 2: Table entitled “Give extra fluid for diarrhoea...”

Annex 3: A short guide on how to teach mothers about home treatment and prevention of diarrhoea

Annex 4: Answers to Frequently Asked Questions to assist the healthcare worker in explaining the addition of zinc, a new treatment, to diarrhoea management

Annex 5: Potential local adaptations

Annex 6: The WHO/UNICEF Joint Statement

The WHO document entitled “The Treatment of Diarrhoea – A manual for physicians and other senior health workers” has been updated to include these changes and should serve as the reference for the management of diarrhoea. This guide is distributed by WHO and can be found by contacting WHO or on the WHO website (http://www.who.int/child-adolescent-health/New_Publications/CHILD_HEALTH/WHO_FCH_CAH_03.7.pdf).

1. Overview of the Management of Diarrhoea

1.1 What is diarrhoea?

The number of stools normally passed in a day varies with the diet and the age of the child. In diarrhoea, stools contain more water than normal — they are often called loose or watery stools. They may also contain blood, in which case the diarrhoea is called dysentery.

Mothers usually know when their children have diarrhoea. When diarrhoea occurs they may say that the stools smell strong or pass noisily, as well as being loose and watery. By talking to mothers you can often find one or more useful local definitions of diarrhoea. In many societies, diarrhoea is 3 or more loose or watery stools in a day.

Diarrhoea is most 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 formulas.

Frequent passing of normal stools is not diarrhoea.

Babies who are breastfed often have stools that are soft; this is not diarrhoea.

1.2 Acute and persistent diarrhoea

Acute diarrhoea starts suddenly and may continue for several days. It is caused by infection of the bowel.

Persistent diarrhoea is diarrhoea that starts like acute diarrhoea but lasts for 14 days or more.

1.3 Why is diarrhoea dangerous?

Two main dangers of diarrhoea are dehydration and malnutrition which can lead to death.

Death from acute diarrhoea is most often caused by loss of a large amount of water and salt from the body. This loss is called dehydration.

Dysentery is another important cause of death related to diarrhoea.

Diarrhoea is worse in children with malnutrition. Diarrhoea can cause malnutrition and can make it worse because:

- ▲ Nutrients are lost from the body in diarrhoea,
- ▲ A child with diarrhoea may not be hungry, and
- ▲ Mothers may not feed children while they have diarrhoea, or even for some days after the diarrhoea is better.

To reduce this malnutrition, foods should be given to children with diarrhoea as soon as dehydration has been corrected.

1.4 How diarrhoea causes dehydration

The body normally takes in the water and salts it needs (input) through drinks and food. It normally loses water and salts (output) through stool, urine and sweat.

When the bowel is healthy, water and salts pass from the bowel into the blood. When there is diarrhoea, the bowel does not work normally. Less water and salts pass into the blood, and more pass from the blood into the bowel. Thus, more than the normal amount of water and salts are passed in the stool.

This larger than normal loss 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 diarrhoea 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 diarrhoea.

Dehydration occurs faster in infants and young children, in hot climates, and when there is fever.

1.5 Zinc and diarrhoea

Zinc is an important micronutrient for a child's overall health and development. Zinc is lost in greater quantities during diarrhoea. Replacing the lost zinc is important to help the child recover and to keep the child healthy in the coming months.

1.6 Treating diarrhoea

The most important parts of treatment of diarrhoea are:

- ▲ Prevent dehydration from occurring if possible,
- ▲ Treat dehydration quickly if it does occur,
- ▲ Give zinc supplements for 10/14 days, depending on the availability of supplies and national policy (please see Annex 5), to reduce the severity of the episode and to reduce the incidence of diarrhoea episodes in the following 2 to 3 months, and
- ▲ Feed the child.

1.6.1 Preventing dehydration

In the home, dehydration can usually be prevented by drinking more fluids as soon as the diarrhoea starts. To do this, give the

recommended home fluids or give available food-based fluids, such as gruel, soup or rice-water. Also increase the frequency of breastfeeding, or give milk feeds prepared with twice the usual amount of water. The types of fluids or solutions used in your area for preventing dehydration in the home will depend on:

- ▲ local traditions for treatment of diarrhoea,
- ▲ availability of a suitable food-based fluid,
- ▲ availability of salt and sugar,
- ▲ access of people to health services, and
- ▲ availability of oral rehydration salts (ORS).

1.6.2 Treating dehydration

If dehydration occurs, the child should be brought to a community health worker or health centre for treatment. The best treatment for dehydration is oral therapy with a solution made with ORS. For breastfeeding children, the frequency and duration of feedings should be increased. The baby should be encouraged to feed as many times and for as long as she or he wants. This treatment will be described in this document. Although this document talks mostly about treating children, the same treatment is also good for adults with diarrhoea. For treating dehydration, ORS should always be used if possible.

1.6.3 Zinc supplementation

It has been shown that zinc supplements given during an episode of diarrhoea reduce the duration and severity of the episode, and lower the incidence of diarrhoea in the following 2–3 months. For these reasons, all patients with diarrhoea should be given zinc supplements as soon as possible after the diarrhoea has started. This will be described later in these guidelines.

1.6.4 Feeding

The child should be offered small amounts of nutritious, easily digestible food frequently. If the child is breastfed, try to increase the frequency and duration of feeds. Feeding during the diarrhoea episode provides nutrients the child needs to be strong and grow, and prevents weight loss during diarrhoea. Fluids given to the child do not replace the need for food. After the diarrhoea has stopped, an extra meal each day for a week will help the child regain weight loss during the illness.

1.6.5 Other treatments

There are no drugs at the present time which will safely and effectively stop diarrhoea.

Antibiotics are not effective against most diarrhoea-causing organisms. They rarely help and can make some people sicker in the long term. Their indiscriminate use may increase resistance of some disease-causing organisms to antibiotics. In addition, antibiotics are costly, so money is wasted. Therefore, antibiotics should not be used routinely. Their appropriate use for dysentery and cholera is described later in this document.

Adsorbents (such as kaolin, pectin, activated charcoal) are not useful for treatment of acute diarrhoea. Adsorbents have been shown to induce only a slight change in stool consistency. However, they do not reduce fluid and salt losses.

Antimotility drugs (such as tincture of opium or loperamide) may be harmful, especially in children less than 5 years of age. They temporarily reduce cramps and pain but delay elimination of organisms causing the diarrhoea and may prolong the illness. They can be dangerous and even fatal if used improperly in infants.

1.7 Preventing diarrhoea

Mothers bringing a child to the clinic are likely to be a receptive audience for information about preventing future diarrhoea. Clinic workers should select the messages from the list of well-established preventive strategies that are most appropriate for each child. Breast milk not only provides the most nutritious food for infants and young children, but also helps protect them from infections and reduces exposure to the pathogens that cause diarrhoea. Safe water and hygienic practices also greatly reduce exposure to pathogens. The preventive messages include: encouraging *exclusive* breastfeeding for infants up to 6 months of age; continuing breastfeeding through at least the second year of life; introducing complementary foods that are nutritious and hygienically prepared at 6 months of age; using the cleanest available water and protecting it from contamination; properly treating water when necessary; regularly and properly handwashing with soap; disposing of faeces in a latrine or potty; and ensuring measles immunization at the appropriate age.

As you go through this document, think about how these recommendations can be adapted and used where you live and work. Take into account the different foods and drinks that are normally available and how they are usually used. Think about the traditional methods for treatment of diarrhoea and the beliefs from which you know or suspect these methods are derived.

The steps to treat diarrhoea are shown in the chart below.

1	2	3
Assess child with diarrhoea	Treat child with diarrhoea	Advise family members about home treatment and prevention of diarrhoea
Assess degree of dehydration	Select treatment and treat appropriately for degree of dehydration	Counsel mother
Ask for symptoms and look for signs indicating other problems	Treat for any other problems	Teach mother to give ORS and zinc. Explain good food choices, including breastfeeding

2. Assessing a Child with Diarrhoea

When a child comes to a health worker or a health centre because of diarrhoea, the first step is to assess the child for signs of dehydration. The health worker should also ask if there is diarrhoea when a child comes with an illness which often is accompanied by diarrhoea, such as measles.

As you read this section, look at the table entitled “Does the child have diarrhoea?” (Annex 1).

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

ASK

How many liquid stools per day has the child had?

For how long has the child had diarrhoea?

Is there blood (more than 1 or 2 streaks) in the stool?

Has there been vomiting?

If so, has there been more than a small amount?

How frequently has the child vomited?

Is the child able to drink?

If so, is he/she thirstier than normal, does he/she drink eagerly?

LOOK

What is the child's general condition?

Is he/she well and alert?

Is he/she restless or irritable?

Is he/she lethargic or unconscious?

Is he/she severely malnourished?

Are his/her eyes normal or sunken?

FEEL

When the skin is pinched, does it go back quickly, slowly, or very slowly (longer than 2 seconds)? In a baby, the health worker should pinch the skin of the abdomen or thigh.

Note: Pinching the skin may give misleading information —

- ▲ In the severely malnourished patient, the skin may go back slowly even if the patient is not dehydrated.
- ▲ In the obese patient, the skin may go back quickly even if the patient is dehydrated.

WEIGH the child, if a scale is available

If a scale is available, carefully weigh the child unclothed or lightly clothed. If the child has been weighed routinely and his weight has been recorded, compare the child's present weight with his last recorded weight.

Has there been any weight loss during the diarrhoea?

If so, were less than 25 grams lost for each kilogram of the child's weight?

Were 25-100 grams lost for each kilogram of the child's weight?

More than 100 grams for each kilogram of weight?

Note: Loss of fluid causes loss of weight. Assessing weight loss is useful if a health worker has a very accurate scale and knows how to use the scale correctly. If a child has been weighed recently, his weight loss will give some idea about how much fluid he/she has lost. Weighing the child again later can help to assess his/her progress. However, it is more useful to rely on clinical signs than on weight loss determination to make a judgment about dehydration.

If a scale is not available, do not delay treatment.

TAKE TEMPERATURE

Does the child have a fever (more than 38.5°C or 101°F)?

Note: Rectal temperature should be taken if the health worker is used to that procedure and is able to disinfect the thermometer after each use. Otherwise, the axillary (armpit) temperature should be taken. Add 0.8°C to the axillary temperature to obtain the equivalent of the rectal temperature.

2.2 Decide how to treat

After you have examined a child, you can decide how to treat him/her.

- ▲ Find on the table "Does the child have diarrhoea?" (Annex 1) the signs which describe the child's condition.
- ▲ If there is blood in the stool and diarrhoea for less than 14 days, give antibiotics.
- ▲ If there is diarrhoea for longer than 14 days with or without blood in the stool or if there is severe malnutrition (see section 3.7), continue feeding the child and refer the child for treatment.
- ▲ If there is fever, show the mother how to cool the child

with a wet cloth and fanning, then look for and treat other causes (for example, malaria).

- ▲ Determine the degree of dehydration. To classify the child's dehydration, begin with the pink (or top) row in the chart entitled "Does the child have diarrhoea?" (Annex 1).
 - » If 2 or more of the signs in the pink row of the table to the left are present, conclude that the child has severe dehydration.
 - » If 2 or more signs are not present, look at the yellow (or middle) row of the same chart. If 2 or more of the signs are present, conclude that the patient has some dehydration.
 - » If 2 or more signs from the middle row are not present, conclude that the patient has no signs of dehydration. This child does not have enough signs to be classified as having some dehydration. Some of these children may have one sign of dehydration or have lost fluid without showing signs.
- ▲ Select the appropriate treatment plan based on the degree of dehydration. These treatment plans are described on the tables entitled "Give extra fluid for diarrhoea and continue feeding" (Annex 2).
 - » For no signs of dehydration, select Treatment Plan A to treat diarrhoea.
 - » For some dehydration, select Treatment Plan B to treat diarrhoea.
 - » For severe dehydration, select Treatment Plan C to treat diarrhoea.

3. Treating Diarrhoea

As you read this section, look at the table entitled “Give extra fluid for diarrhoea...” (Annex 2).

3.1 Child with NO Dehydration

This child needs extra fluid to prevent dehydration. A child with **no signs of dehydration** needs home treatment. The four rules of home treatment are:

- ▲ Give extra fluids, ORS solution or recommended home fluids.
- ▲ Continue feeding, encourage ongoing breastfeeding when applicable.
- ▲ Give zinc supplementation for 10/14 days in the recommended dose for the child’s age. The first tablet should be given in the health centre, demonstrating to the mother how to dissolve it in water or breastmilk, if necessary.
- ▲ Advise the mother on when to return to the health facility.

“Plan A: Treat Diarrhoea at Home” (Annex 2) describes what fluids to teach the mother to use and how much she should give. It also emphasizes the importance of giving zinc supplements during diarrhoea to reduce the severity of the episode and after the diarrhoea has stopped to reduce the incidence of diarrhoea in the next 2 to 3 months. A child with **NO DEHYDRATION** also needs food, and the mother needs advice about when to return to the clinic.

3.2 Child with SOME Dehydration

A child with some signs of dehydration needs extra fluids and food. Treat the child with ORS first in the health facility and then, when all signs of dehydration have disappeared, the child should be sent home for continued treatment.

- ▲ Give ORS in the clinic until the skin pinch is normal, the thirst is over, the child is calm. Four hours of rehydration are usually necessary for this.
- ▲ Give the first zinc supplement in the clinic. Instruct the mother that zinc should be continued for 10/14 days with the recommended dose dependent on the child’s age. Zinc should be given as soon as the child can eat and has successfully completed 4 hours of rehydration.
- ▲ In addition to fluid the child with **SOME DEHYDRATION** needs food. Breastfed children should continue

breastfeeding. Other children should receive their usual milk or some nutritious food after 4 hours of treatment with ORS.

This treatment is described in “Plan B: Treat some dehydration with ORS” (Annex 2).

3.3 Child with SEVERE Dehydration

Any child with **signs of severe dehydration** needs extra fluids. A child classified with **SEVERE DEHYDRATION** needs fluids quickly. Treat with IV (intravenous) fluids. “Plan C: Treat severe dehydration quickly “ (Annex 2) describes how to give fluids to severely dehydrated children. Children with **SEVERE DEHYDRATION** should be treated by IV drip and admitted to the hospital or health centre. If a health facility with an IV is not within 30 minutes, the use of an nasogastric tube is recommended.

- ▲ ORS should be given as soon as the child can take it, even while the IV is running.

When severe dehydration is corrected, the patient should be managed as above including zinc therapy when he/she can eat.

3.4 Child with BLOOD IN THE STOOLS

A child with **blood in the stools** should be treated for dehydration and Shigella infection.

- ▲ Children with severe dehydration and/or severe malnutrition should be admitted to the hospital and treated immediately for these problems.
- ▲ Prescribe antibiotics effective against Shigella. You can assume that Shigella caused the dysentery because Shigella causes about 60% of dysentery cases seen in the clinic and Shigella causes nearly all cases of life-threatening dysentery. Finding the specific cause of dysentery requires a stool culture and it can take at least 2 days to obtain the laboratory test results.
- ▲ Manage dehydration in the clinic and then advise for home management as described above for children with no or some signs of dehydration.
- ▲ Prescribe zinc supplementation as above for children with no or some signs of dehydration.

3.5 Child with suspected CHOLERA

A child with **suspected cholera** should be managed as above for children with some or severe dehydration.

- ▲ Careful monitoring of dehydration is required.
- ▲ IV drips are often needed.
- ▲ Prescribe oral antimicrobials effective against local strains of *V. cholerae* as soon as vomiting stops.
- ▲ Prescribe zinc supplementation as soon as vomiting stops as directed above.

3.6 Child with PERSISTENT Diarrhoea

A child with persistent diarrhoea should be managed on a case-by-case basis for other symptoms and malnutrition.

- ▲ Zinc supplementation can be given to children with persistent diarrhoea as part of a more comprehensive treatment program.
- ▲ Specific considerations for treatment of these children are more thoroughly described in the complete WHO guide for treating diarrhoea.

3.7 Other signs and symptoms

When treating diarrhoea you should also look for other signs and symptoms. ORS and zinc can be given if other signs and symptoms are present, but the child may need additional medication for additional problems. Some common problems are described below.

- ▲ **FEVER.** Paracetamol can be given to lower the fever. In areas with malaria, fever is often a sign of malaria and the child will need the appropriate malaria treatment. Treat or refer for malaria. Zinc supplementation should not be a substitute for malaria treatment; but it is safe to give it simultaneously.
- ▲ **SEVERE MALNUTRITION.** If you weigh children in the clinic, this will alert you that a child may need nutritional management. If measuring is not done, observe the child and determine if the child looks wasted, has generalized swelling, or sparse hair. Refer for nutritional management.
- ▲ **RESPIRATORY PROBLEMS.** Children who have signs of respiratory problems should be assessed for pneumonia. Children with pneumonia should be given an antibiotic and treated appropriately for the pneumonia or referred to a treatment facility.

4. Home-Based Treatment

Mothers and other family members can often treat diarrhoea themselves with fluids and food that they have at home. Health workers can help if they show mothers how to do this.

The four rules for treating diarrhoea in the home are explained below. Briefly, these rules are to increase fluids, to give zinc supplements, to continue to feed the child, and to bring the child to a health worker if he/she is not getting better. These four rules are also given in the table entitled “PLAN A: Treat Diarrhoea at Home” (Annex 2).

4.1 Steps for advising families

4.1.1 Ask, Praise, Advise, Check

In Annex 3, we have inserted a guide to reinforce the World Health Organization’s recommended method for communicating with mothers:

Step 1. ASK

The first step when giving guidance to the mother should be to find out what she is already doing that is good and what she is doing that needs improvement. By asking the mother first the healthcare worker takes the time to find out more about the mother and the care she is giving her child concerning feeding, medications, and seeking healthcare.

Step 2. PRAISE

The second step is to praise the mother for doing the good things she is doing. Praising helps the mother feel good about her care. She will be more responsive to your advice and will feel more confident in her ability to go home and continue giving quality care to her child. The mother may not be doing everything correctly; later you can address what she is doing wrong. When giving praise find something that she is doing well, and praise her for it.

Step 3. ADVISE

The third step is to advise the mother how to treat her child at home. At this point you have asked questions, praised her for the good things she has done, and now are ready to help her treat her child. Give her advice and when possible demonstrate how she will do these things. Show her how to make ORS and zinc

while she is with you. Use pictures to describe what foods are appropriate for the age of her child and how to prepare them.

Step 4. CHECK

The fourth step is to check to see that the mother understood your advice. This is your final chance to clarify any uncertainties she has and any confusion about the treatment for her child. Ask open-ended questions when checking to give the mother a chance to show what she knows. Be sure to encourage and praise at this level as well.

4.1.2 Explaining the four rules of home treatment

Health workers should explain the four rules of home treatment (next page) to mothers and other family members whenever they have the opportunity, for example, when a mother comes for prenatal care or brings her child for immunization.

- ▲ Remember the community's beliefs about diarrhoea and ways of treating it. Relate your advice to current practices and use words the mother will understand.
- ▲ Explain the four rules for treating diarrhoea at home.
- ▲ Show the mother what to do (for example, show how much fluid to give the child after each stool).
- ▲ Use teaching aids which are familiar (for example, use the mother's own child to show her how to look for sunken eyes; use commonly available containers to demonstrate how to mix ORS).
- ▲ Let the mother show you what she is learning while you watch (for example, feeding the fluid with a spoon, or administering zinc supplement) to be sure that she can do it and to help her remember.
- ▲ Ask her to tell you, in her own words, things that she has learned but not practiced, to be sure that she remembers. For example, she can tell what food she will give and how often.
- ▲ Ask her if she has any questions and try to answer them.
- ▲ Ask her about any problems she may have following the four rules. Listen to what she says and try to help her find a solution to them.
- ▲ Tell the mother what to expect (for example, how long it will take for the child to get well).

4.1.3 Preventing Diarrhoea

Clinic workers are well placed to teach family members and motivate them to adopt preventive measures. Mothers of children being treated for diarrhoea are likely to be particularly receptive to such messages. It is best to emphasize only one or two of the following points to avoid overloading mothers with information. Select those that are most appropriate for the particular child.

- ▲ Breastfeeding is important for preventing diarrhoea as well as for avoiding dehydration. During the first 6 months of life, infants should be *exclusively* breastfed. Exclusively breastfed infants are much less likely to get diarrhoea or to die from it than infants who are not breastfed at all or are partially breastfed. Breastfeeding also protects against the risk of allergies early in life, helps in child spacing and provides protection against other infections (e.g., pneumonia). Breastfeeding should be continued until at least 2 years of age.
- ▲ Complementary foods should be introduced when a child is 6 months old. Good weaning practices involve selecting nutritious foods and using hygienic practices when preparing those foods.
- ▲ Diarrhoea reduction can be achieved by using water for drinking and food preparation that is obtained from a safe source and is properly stored.
- ▲ Water should be properly treated (e.g., chlorinated) when necessary, acceptable available and affordable.
- ▲ Handwashing with soap and water after defecation or cleaning a baby's bottom, and before eating, feeding a child or preparing food will reduce diarrhoea.
- ▲ Dispose of children's faeces in a sanitary latrine or potty.
- ▲ Measles immunization can substantially reduce diarrhoeal disease; therefore, every infant should be immunized against measles at the recommended age.

4.2 Four rules for home treatment of diarrhoea

4.2.1 Rule 1: Give the child more fluids than usual

- ▲ What fluids?
 - » If it is available at home, the mother should give ORS solution, as ORS can not only treat dehydration but it can also prevent dehydration to occur in a child with diarrhoea. If ORS is not available at home she should give the recommended home fluid or food-based fluids, such as gruel, soup, or rice water.

- » If an infant or child is breastfed — continue to breastfeed, but more frequently and for longer each feed.
- » If the infant is exclusively breastfed — give ORS in addition to the breast milk.
- » If an infant is not breastfed — give one or more of the following: ORS solution, food-based fluids (such as soup, rice water, and yoghurt drinks), or clean water.

Good Liquids Without Salt

Clean Water
 Unsalted rice water
 Unsalted yoghurt drink
 Green coconut water
 Weak tea
 Unsweetened fresh fruit juice

Good Liquids With Salt

ORS Solutions
 Salted Soup
 Salted yoghurt drink
 Salted rice water

Advise the mother what liquids not to give.

Do not Give

Soft drinks
 Sweetened tea
 Sweetened fruit drinks
 Coffee
 Some local medicinal teas or infusions

How much?

- » Give children under 2-years-old, approximately 50-100ml ($\frac{1}{4}$ large cup) of fluid after each loose stool. Give older children $\frac{1}{2}$ to 1 large cup.
- » Older children and adults should drink as much as they want.

▲ When to stop

- » ORS or recommended home-fluids should be given until the diarrhoea stops. This may last several days.

4.2.2 Rule 2: Zinc supplementation (these recommendations are based on a 20 milligram tablet)

▲ Why?

- » Zinc decreases the length and severity of the diarrhoea. Zinc is important for the child's immune system and will help the child fight off new episodes of diarrhoea in the 2-3 months following treatment. Zinc improves appetite and growth.

▲ How much?

- » Children less than 6 months of age should receive ½ tablet once a day for 10/14 days. Children 6 months and older receive 1 tablet per day for 10/14 days.

▲ How is it administered?

Describe how to give and demonstrate with the first tablet in the clinic:

- » Infants: Dissolve the tablet in a small amount (5 ml) of expressed breastmilk, ORS, or clean water in a small spoon.
- » Older children: Tablets can be chewed or dissolved in a small amount of clean water in a small spoon.

▲ Importance of giving the entire dose

- » Remind the mother that it is important to give the full 10/14-day dose to the child even if the diarrhoea ends. Again tell the mother that zinc will improve the overall health, growth, and appetite. Emphasize the importance of the entire zinc dose for this sick child, not to be saved for later cases or other children.

4.2.3 Rule 3: Continue to feed the child

▲ What foods?

- » If the child is breastfeeding, breastfeed more frequently and for longer at each feed.
- » Give the child above 6 months of age foods with the highest amount of nutrients and calories relative to bulk. Depending on the child's age, these should be mixes of cereal and locally available beans, or mixes of cereal and meat or fish. Add oil to these foods to make them energy-rich. Dairy products and eggs are also suitable. Fresh fruit juices and bananas are helpful because they contain potassium.

Avoid:

- » High fibre or bulky foods, such as coarse fruits and vegetables, fruits and vegetable peels, and whole grain cereals. These are hard to digest.
- » Very dilute soups. These are recommended as fluids, but are not sufficient as foods because they fill up the child without providing sufficient nutrients.
- » Foods with a lot of sugar. These foods can worsen diarrhoea.

▲ How to prepare the food

- » Prepare foods by cooking well, fermenting, mashing or grinding. This will make the food easier to digest.
- » Give freshly prepared foods to minimize chance of contamination. If previously prepared foods must be offered, first reheat them to a boil.

▲ How much food?

- » Encourage the child to eat as much as he/she wants. Offer food every 3 to 4 hours (six times each day) or more often to a young child. Small frequent feedings are best because they are more easily digested and preferred by the child.
- » After the diarrhoea has stopped, give the child one extra meal each day for a week. This extra food helps the child regain the weight lost during the illness. Some children will continue to need extra foods to reach their pre-illness weight, or a normal weight for height.

▲ Why feed the child?

- » Starving a child who has diarrhoea can cause malnutrition or make it worse. Mothers may withhold food, believing this will decrease diarrhoea. But it is more important to give nutrients the child needs to stay strong and grow. A strong child will resist illness better.
- » During and after diarrhoea give special attention to feeding the child nutritious food frequently. Even though absorption of nutrients from food is lessened somewhat during diarrhoea, most of the nutrients will be absorbed. Fluids given to the child do not replace the need for food.

4.2.4 Rule 4: When to return to the clinic

The mothers should bring the child to a health worker if the child shows any of the following:

- ▲ Passes many stools,
- ▲ Is very thirsty,
- ▲ Has sunken eyes,
(The above 3 signs suggest your child is dehydrated)
- ▲ Seems not to be getting better after 3 days,
- ▲ Has a fever,
- ▲ Does not eat or drink normally.

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?

Classify DIARRHOEA

for DEHYDRATION

and if diarrhoea 14 days or more

and if blood in stool

Annex 1

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

Annex 2

GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

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 infant is exclusively breastfed, give ORS 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

4) WHEN TO RETURN

GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

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.

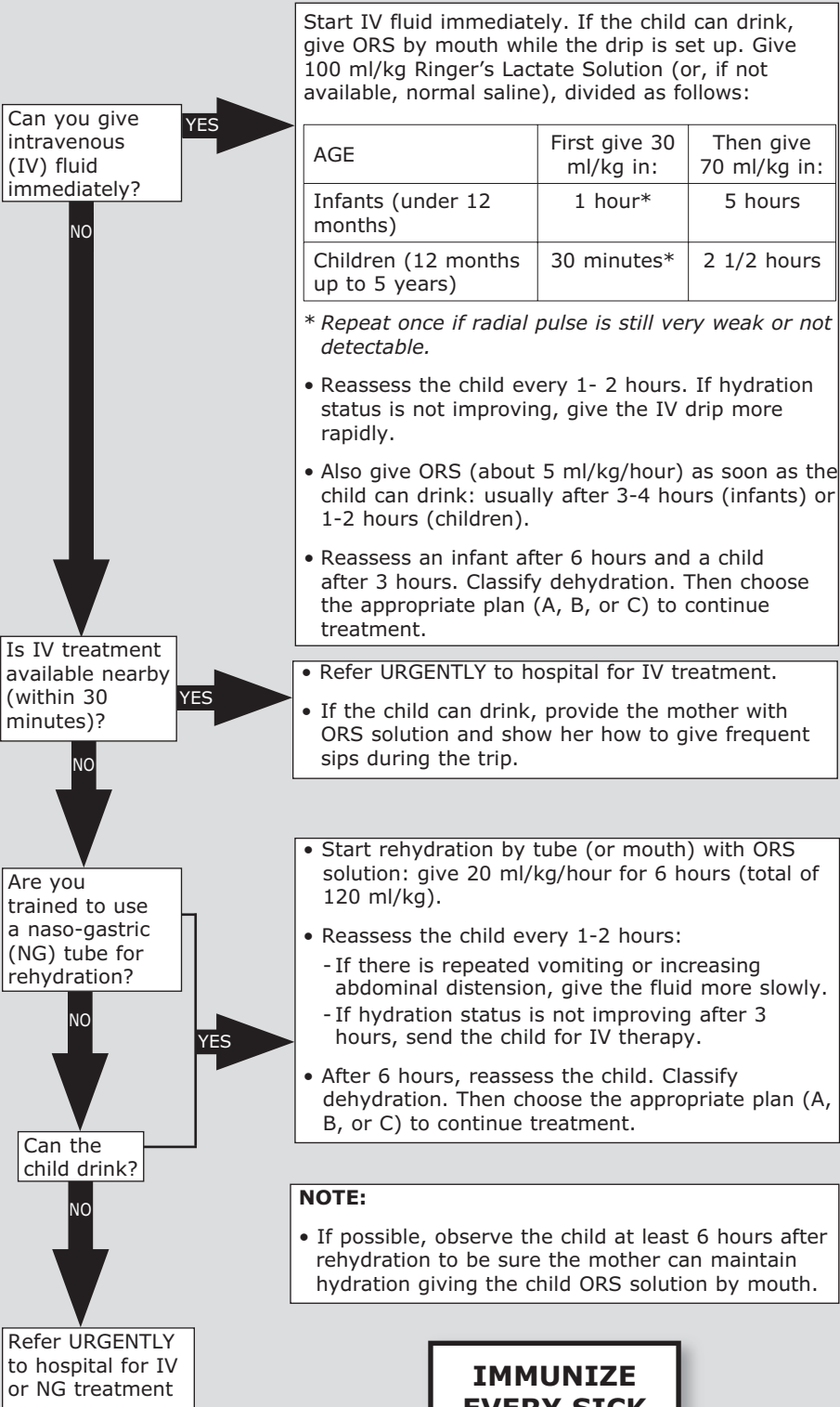
➤ **IF THE MOTHER MUST LEAVE BEFORE COMPLETING TREATMENT:**

- 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 (see Plan A for recommended fluids)
 - 2) GIVE ZINC SUPPLEMENTS
 - 3) CONTINUE FEEDING
 - 4) WHEN TO RETURN

GIVE EXTRA FLUID FOR DIARRHOEA AND CONTINUE FEEDING

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>PNEUMONIA</p> <p>After 2 days:</p> <p>Check the child for general danger signs.</p> <p>Assess the child for cough or difficult breathing. } See ASSESS and CLASSIFY chart</p> <p>ASK:</p> <ul style="list-style-type: none"> - Is the child breathing slower? - Is there less fever? - Is the child eating better? <p>Treatment:</p> <ul style="list-style-type: none"> ➤ If chest indrawing or a general danger sign, give a dose of second-line antimicrobial or intramuscular chloramphenicol. Then refer URGENTLY to hospital. ➤ 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>PERSISTENT DIARRHOEA</p> <p>After 5 days:</p> <p>ASK:</p> <ul style="list-style-type: none"> - Has the diarrhoea stopped? - How many loose stools is the child having per day? <p>Treatment:</p> <ul style="list-style-type: none"> ➤ 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. ➤ 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>BLOOD IN STOOL</p> <p>After 2 days:</p> <p>Assess the child for diarrhoea. > See ASSESS & CLASSIFY chart.</p> <p>ASK:</p> <ul style="list-style-type: none"> - Are there fewer stools? - Is there less abdominal pain? - Is there less fever? - Is there less blood in the stool? - Is the child eating better? <p>Treatment:</p> <ul style="list-style-type: none"> ➤ If the child is dehydrated, treat dehydration. ➤ Continue giving zinc supplements for 14 days. ➤ If number of stools, amount of blood in stools, fever, abdominal pain, or eating is the same or worse, refer to hospital. ➤ If fewer stools, less blood in the stools, less fever, less abdominal pain, and eating better, continue giving the same antibiotic until finished. 	<p>FEVER</p> <p>If fever persists after 2 days:</p> <p>Do full reassessment of the child > See ASSESS & CLASSIFY chart</p> <p>Assess for other causes of fever</p> <p>Treatment:</p> <ul style="list-style-type: none"> ➤ If the child has any general danger signs or stiff neck, treat as VERY SEVERE FEBRILE DISEASE. ➤ If the child has any apparent cause of fever, provide treatment. ➤ If fever has been present for 5 days, refer for assessment. ➤ 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.

FLUID

➤ **Advise the Mother to Increase Fluid During Illness**

FOR ANY SICK CHILD:

➤ Breastfeed more frequently and for longer at each feed.

➤ If not exclusively breastfed, increase fluid. For example, give soup, rice water, yoghurt drinks or clean water.

FOR CHILD WITH DIARRHOEA:

➤ Giving extra fluid can be lifesaving. Give fluid according to Plan A or Plan B on TREAT THE CHILD chart.

WHEN TO RETURN

➤ **Advise the Mother When to Return to Health Worker**

FOLLOW-UP VISIT: Advise the mother to come for follow-up at the earliest time listed for the child's problems.

If the child has:	Return for follow-up in:
PNEUMONIA	2 days
DYSENTERY	
FEVER, if fever persists	
MEASLES with EYE or MOUTH COMPLICATIONS	
PERSISTENT DIARRHOEA	5 days
ACUTE EAR INFECTION	
CHRONIC EAR INFECTION	
FEEDING PROBLEM	
ANY OTHER ILLNESS, if not improving	
PALLOR	14 days
LOW WEIGHT FOR AGE	30 days
RICKETS	

WHEN TO RETURN IMMEDIATELY

Advise mother to return immediately if the child has any of these signs:	
Any sick child	<ul style="list-style-type: none">• Not able to drink or breastfeed• Becomes sicker• Develops a fever
If child has NO PNEUMONIA: COUGH OR COLD, also return if:	<ul style="list-style-type: none">• Fast breathing• Difficult breathing
If child has Diarrhoea, also return if:	<ul style="list-style-type: none">• Blood in stool• Drinking poorly

NEXT WELL-CHILD VISIT: Advise mother when to return for next immunization according to immunization schedule.

Annex 3

Advising Mothers for Home Treatment

Teaching mothers how to care for their children in the home is an extremely important part of diarrhoea management. How well you are able to communicate with the mother to ensure that she fully understands your guidance will determine how well the mother is able to successfully carry out ORS, zinc treatment, and continued feeding in the home.

This guide will reinforce the World Health Organization's recommended method for communicating with mothers: ASK, PRAISE, ADVISE, CHECK.

Review of Ask, Praise, Advise, Check

When talking to the mother about her care for the child there are 2 important things to remember:

- 1) Use simple language that the mother will understand. Do not use difficult words or technical language that is difficult to understand. The mother may not be comfortable telling you she does not understand and will leave without knowing what she is to do or why she is to do something.

Simple language should always be used (Example):

I am going to give you zinc supplements for your baby's diarrhoea. The zinc is good for your baby during diarrhoea and will help your baby become well faster.

Difficult language should never be used (Example): Zinc supplementation is now recommended for the treatment of diarrhoea. Zinc is an essential micronutrient and is lost at a high rate during diarrhoea. Zinc supplementation will decrease the duration and severity of the diarrhoea episode.

- 2) Ask open-ended questions to give the mother the opportunity to speak freely, not just agree or disagree with a question. Open-ended questions allow mothers to offer the information first and speak truthfully about the care they have been giving their children. Closed questions are questions that often end in a yes/no and give little information about what is actually happening in the home. A mother may answer yes or no according to what she believes she should be doing, not what is actually happening.

Open-ended question should always be used (Example):

What have you been feeding your child while he/she is ill?

Closed questions should never be used (Example): Are you giving your child frequent small meals to ensure he/she stays strong during the diarrhoea?

Step 1. ASK

The first step when giving guidance to the mother should be to find out what she is already doing that is good and what she is doing that needs improvement. By asking the mother first the healthcare worker takes the time to find out more about the mother and the care she is giving her child concerning feeding, medications, and seeking healthcare.

Step 2. PRAISE

The second step is to praise the mother for doing the good things she is doing. Praising helps the mother feel good about her care. She will be more responsive to your advice and will feel more confident in her ability to go home and continue giving quality care to her child. The mother may not be doing everything correctly; later you can address what she is doing wrong. When giving praise find something that she is doing well and praise her for it.

Step 3. ADVISE

The third step is to advise the mother how to treat her child at home. At this point you have asked questions, praised her for the good things she has done, and now are ready to help her treat her child. Give her advice and when possible demonstrate how she will do these things. Show her how to make ORS and zinc while she is with you. Use pictures to describe what foods are appropriate for the age of her child and how to prepare them.

Step 4. CHECK

The fourth step is to check to see that the mother understood your advice. This is your final chance to clarify any uncertainties she has and any confusion about the treatment for her child. Ask open-ended questions when checking to give the mother a chance to show what she knows. Be sure to encourage and praise at this level as well.

Giving Advice on ORS and Increased Liquids

The importance of giving ORS to dehydrated children and plenty of fluids for any child with diarrhoea has been described in Part 3. To ensure that the mother understands how to give ORS and what fluids are appropriate use ASK, PRAISE, ADVISE, CHECK to find out the quantity and what types of fluids she has been giving her child and to give appropriate advice.

SITUATION: Mother comes in with an 8-month-old boy with some dehydration.

ASK: Have you been giving your child anything to drink since the diarrhoea started?

MOTHER: I gave a cup of ORS yesterday but he did not really want it.

PRAISE: It is good that you tried to give your baby ORS. ORS will help to prevent dehydration in your son.

ADVISE: Today your son needs more fluids and needs more ORS to become well. I need you to give ORS to him even if he does not appear to want it. You have to be patient. Every time he has a loose stool give him $\frac{1}{4}$ to $\frac{1}{2}$ of a large cup of ORS. (Show cup size.) Give other fluids too such as clean water and (locally appropriate) liquids throughout the day. This will prevent your son from becoming too dry.

CHECK: When you go home, what liquids are you going to give him?

MOTHER: I can give ORS and water.

CHECK 2: How much ORS will you give your son?

MOTHER: I will give $\frac{1}{2}$ of a big cup every time he has a loose stool

It is now clear that the mother understands your advice. You should follow up with more questions regarding options for other liquids to ensure she truly understands why additional fluids are necessary.

Giving Advice on Zinc Treatment

Zinc supplementation for the treatment of diarrhoea will be new to most mothers and each mother may need extra guidance and time from the healthcare worker to ensure she is comfortable giving the tablets to her child and to ensure she understands the importance of giving a tablet daily, even when the diarrhoea is over. Zinc tablets can and should be promoted instead of antidiarrhoeals and unnecessary antibiotics.

SITUATION: Mother brings breastfed 4-month-old baby girl to clinic with non-bloody diarrhoea.

ASK: Have you given your baby any medication for the diarrhoea?

MOTHER: No, I have not. I came here for medication.

PRAISE: It is good that you came here and have not given your small baby any medications which can harm her.

ADVISE: Today I am giving you zinc supplementation along with ORS for your baby's diarrhoea. These tablets will help your baby's diarrhoea stop and will help her stay healthy in the coming months. It is really

important that you give her one dose on all the 10/14 days and do not stop when the diarrhoea stops. The zinc can help prevent sickness in the coming months and is good for your baby. Please give her ½ of a tablet every day for 10/14 days. You can dissolve the tablet in breastmilk. (Demonstrate how to dissolve in breastmilk.)

CHECK: How are you going to give the tablet to the baby?

MOTHER: I am going to dissolve ½ tablet every day in breastmilk, just like we did today.

CHECK 2: When will you stop the tablets?

MOTHER: I will give her ½ tablet for 10/14 days.

The mother has understood your instructions. By demonstrating how to give the tablet and discussing with her the reasons she must give the tablet we can be hopeful that she will follow our directions and give all 10/14 doses. Further questions to assess the mother's knowledge may be helpful and may help ensure that she knows all she should to follow your directions for 10/14 days.

Giving Advice on Continued Feeding

Mothers need to know the importance of continued feeding during diarrhoea. Be sure to know which healthy foods are available, acceptable and affordable in your area and promote these foods when giving advice. Children with diarrhoea over 6 months of age need to be offered frequent small meals and must be encouraged to eat.

SITUATION: Mother brings her 2-year-old boy to the clinic with diarrhoea and some dehydration.

ASK: What foods have you been giving your child during the diarrhoea?

MOTHER: I give him thin porridge, but he does not want it.

PRAISE: It is good that you are offering porridge to your child. Keep offering foods to your child and encourage him to eat.

ADVISE: It would be good if you could offer other foods as well (know local foods, demonstrate or show picture if appropriate). Porridge alone, especially when too thin, might not be enough to help him get better. You might have to help him eat more than usual by feeding him and sitting with him while he eats.

CHECK: How can you help your child become stronger?

MOTHER: I can sit with him while he eats and encourage him. I think I will also try a new food that he might like.

It is now clear that the mother understands the importance of giving good, quality foods to her son while he has diarrhoea. Remember always suggest foods that are very easy to make and foods you know the mother can afford.

Giving Advice on Coming Back to the Clinic

When a mother is sent home to manage her child's diarrhoea she must know when she should return to the clinic. She must know how to assess her child for signs that the diarrhoea is worsening or that her child develops any additional problems that need medical attention.

ASK: When will you bring your baby back to the health clinic?

MOTHER: I will bring my baby back if the diarrhoea gets worse.

PRAISE: That is a good reason and do bring your baby back if the diarrhoea gets worse.

ADVISE: Also, you should bring your baby back if your baby's diarrhoea does not seem to improve in 3 days, if you see any blood in the stool, if he/she develops a high fever, begins to have severe vomiting, has a marked thirst or begins eating or drinking poorly

CHECK: It's very important that you know when you have to bring your baby back to the clinic. What will you look for to bring your baby back to see me?

MOTHER: Fever, vomiting, and if he/she is not better in 3 days.

The mother appears to understand the basics. You may want to restate the signs she forgot so she hears them a second time.

Giving Advice on Unnecessary Antibiotics and Antidiarrhoeals (assuming that zinc tablets are available only at the clinic)

Many mothers think their baby needs an antibiotic or some sort of 'drug' to treat the diarrhoea episode. Antibiotics are only recommended for children with bloody diarrhoea and episodes of cholera. Giving the mother zinc supplementation will likely help with this because zinc decreases the duration of the diarrhoea. Continue to discourage the mother from going to local pharmacies or markets for additional antibiotics or antidiarrhoeals.

ASK: Have you given your baby any medicines for the diarrhoea?

MOTHER: I gave him/her these small pills from the pharmacy.

PRAISE: It is good that you are concerned for your baby and are trying to help him/her.

ADVISE: The pills you bought for your baby might actually hurt him/her. I have something that we know is good for your baby and will help the diarrhoea. I want you to give these zinc tablets to your baby instead of the ones you bought from the pharmacy. When your baby has diarrhoea you need to come to us for ORS and zinc and stay away from other pills and syrups that may be harmful to your baby.

CHECK: The next time your baby has diarrhoea where will you go for medicine?

MOTHER: I will come here instead of the pharmacy to get ORS and zinc.

The mother understands that she needs to come to the clinic and stay away from the pharmacy. Zinc can and should be promoted as a beneficial ‘drug’ which will encourage mothers to avoid antibiotics and antidiarrhoeals. You can explain further why the antibiotics and antidiarrhoeals are not good for the baby.

Giving Advice on Diarrhoea Prevention

There are numerous things mothers can do to decrease the chances of someone in her family getting sick with diarrhoea. Listing these for the mother may not be the best way to get her to remember all of them. Instead, find out how much the mother knows and what she is already doing and then add to her knowledge. As a healthcare worker, you will want to ensure the mother knows about the basic diarrhoea prevention strategies:

- » Exclusive breastfeeding for babies under 6 months of age
- » Improved weaning practices
- » Use of clean water for drinking and washing
- » Handwashing
- » Use of latrines
- » Quick and sanitary disposal of babies’ stools
- » Measles immunization

Help the mother by assessing what she knows and building on her knowledge and skills. An example is below.

SITUATION: Mother comes to you with a 9-month-old girl who is mildly malnourished.

ASK: I want to help you to prevent diarrhoea in the future. Did you know that there are things mothers and fathers can do to help prevent their children from

getting diarrhoea? Are you doing anything at home to help prevent diarrhoea?

MOTHER: I breastfeed my baby a little and give her formula with clean bottle and always use clean water.

PRAISE: It is good that you give your baby breastmilk and formula. It is also good that you use clean water all the time.

ADVISE: It is better if you give the formula to the baby from a cup and small spoon. The nipple on the bottle is difficult to clean well, it is safer to use a cup and spoon to prevent diarrhoea. You should also be giving your baby soft mashed foods (locally defined) to help her grow better.

CHECK: When you go home and give formula to your baby today what can you do help prevent diarrhoea?

MOTHER: I will use a cup and spoon instead of the bottle. I will also give her porridge when the family eats.

The mother understood your advice. Additional questions following the Ask, Praise, Advise, Check recommendations to address other aspects of diarrhoea prevention should follow.

Sample conversation

All preceding examples were short elements of a conversation between a mother and a healthcare worker. Let us look now at an example of a full conversation that may happen between a healthcare worker and a mother. In this example, the healthcare worker has already examined the child, named Sami, and has found he has mild diarrhoea and is not dehydrated. Sami is 9 months old and is still breastfeeding.

Health worker Has Sami been drinking anything?

Mother Yes.

Health worker What has he had to drink?

Mother Some water, rice water, and a little guava-leaf tea.

Health worker In general, has he been drinking more than usual, less than usual, or about the same amount?

Mother About the same amount.

Health worker It is very good that you give him water and rice water. With the diarrhoea, what do you notice about Sami's stools? They are very watery, no? This means he is losing water, and drinking will help replace this so he will not dry up and get weak. You should continue to encourage him to drink, maybe even a bit more than usual.

Now, has he been eating, or breastfeeding?

Mother He hasn't eaten anything, only breastmilk.

Health worker What seems to be the problem?

Mother He is not hungry.

Health worker Yes, this often seems so. It is good that you are still breastfeeding him, and you should keep on doing that. But it is important that Sami eats, to stay strong. What could you give him, in addition to the breast?

Mother Rice.

Health worker Rice is very good. Maybe you could try mixing the rice with some mashed vegetable, and a little oil. If you make the food very soft, it will be easier for Sami to eat. Try to get him to eat a little bit at a time, several times a day. Be patient in encouraging him to eat; he will need the food to stay strong.

Has he taken any medicine, or other treatments?

Mother Yes, I gave him these small pills from the pharmacy.

Health worker It is good that you are concerned for your child and are trying to help him. However, the pills you bought for your child might actually hurt him. I have something that we know is good for your child and will help the diarrhoea. Today I am giving you zinc supplementation for your child's diarrhoea. These tablets will help your child's diarrhoea stop and will help him stay healthy in the coming months. It is really important that you give him one dose every day for the next 10-14 days. You should continue giving him these zinc tablets even when the diarrhoea stops. The zinc can help prevent sickness in the coming months and is good for your child. Please give him 1 tablet every day for 10-14 days. [Demonstrate how to dissolve the tablet in a little bit of water.]

How are you going to give the tablet to your child?

Mother I am going to dissolve 1 tablet every day in a little bit of water, just like we did today.

Health worker When will you stop the tablets?

Mother I will give him 1 tablet every day for 10-14 days.

Health worker That is very good. Sami will be well in a few days if you give him plenty to drink, help him to eat and give zinc tablets to stay strong.

Here is how you will know if he needs medical care:

If he cannot drink or eat, or

If he is very thirsty;

If he has many watery stools, or

If he is vomiting a lot, or

If he has fever, or

If there is blood in his stools.

If you notice any of these things, continue to give Sami food and drink if you can, and bring him back to see me.

Now, can you tell me what to do for Sami at home?

Mother I will help him to eat, drink and I am going to giving the zinc tablets as you showed me before.

Health worker Anything else?

Mother And breastfeed.

Health worker How much should he drink?

Mother He should drink more than usual.

Health worker Right. How can you encourage him to eat?

Mother I will make soft, mashed food, and try giving him little bits at a time.

Health worker Good. And eventually, why would you need to come back here?

Mother I will watch to see if he has fever or if there is blood in his stools.

Health worker Good, but also watch to see if he is very thirsty, if he can't eat or drink, if he vomits frequently, or if he has a lot of watery diarrhoea.

Since you live quite far from here, I'll give you two packets of this medicine (ORS) to take home and to give to Sami. Each packet must be mixed carefully with 1 litre of water. I am also giving you enough zinc tablets for 10-14 days.

Annex 4

Frequently Asked Questions About Zinc Supplementation

Zinc supplements are a new treatment for diarrhoea so mothers may have difficult questions regarding the treatment. As a healthcare worker you can calm fears and address issues by counseling the mother. Below are a few issues and concerns expressed by mothers in past research regarding zinc supplementation.

Zinc and ORS

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

A: Yes. In countries like Egypt, zinc is added to some locally produced ORS. But using the ORS containing zinc does not result in a dose of zinc that is adequate to achieve the benefits observed with daily 20 mg zinc supplements given for 10 to 14 days. Indeed, ORS is usually consumed for an average of two days; and the average quantity consumed by a child with diarrhoea is about 400 to 500 ml per day. Therefore, if ORS contains 40 mg of zinc per liter, this means that a child will only consume 16 to 20 mg of zinc per day for two days

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

A: No, you should continue to give plenty of ORS, as recommended, even though you are giving zinc. ORS will help to replace fluids lost during diarrhoea. Zinc will speed up recovery, and will help the child fight off new episodes of diarrhoea in the 2-3 months following treatment. Zinc will also improve appetite and growth.

Length of time to use zinc

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

A: Zinc is good for your sick child, 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 appetite. Remember, even though your child does not have loose stools, he will still need to continue to take the zinc AND eat and drink more than usual for 2 weeks after the diarrhoea, all of this will help replace lost nutrients. Zinc will help your child not get diarrhoea 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 vomiting stops. Make sure your child is keeping down 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 centre.

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, you should come back to the health centre 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 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 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 healthcare 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 diarrhoea is over it will help replace lost nutrients. You can continue to give the multivitamin and give the zinc as diarrhoea 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, you can give zinc with other medicines. Only give your child medicines that are prescribed at the clinic or by a community healthcare worker.

Q: Should I get an antibiotic for the diarrhoea?

A: Only children with bloody diarrhoea need antibiotics. If you have not been given any at this time, your child does not need one. If you start to see blood in your child's stool, bring him/her to a healthcare centre for further treatment.

Persistent Diarrhoea

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 does not improve in 3 days, come back to the health centre. Also, come to the health clinic at any time should he/she show 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 come back to the health centre 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 each day. If your child will eat more than usual, allow him/her to do that. Increased foods will help him. 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 him/her to eat as many times as she wants for as long as she wants.

Q: Does breastmilk cause diarrhoea?

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

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 plenty of ORS and plain clean water as well.

Annex 5

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.

Social Marketing and Promotion

Sponsored social marketing and promotion strategies accompanying this training manual will be in accordance with products endorsed after meeting international safety standards. Additional efforts to market additional products may be done by private bodies.

Local Food and Drink

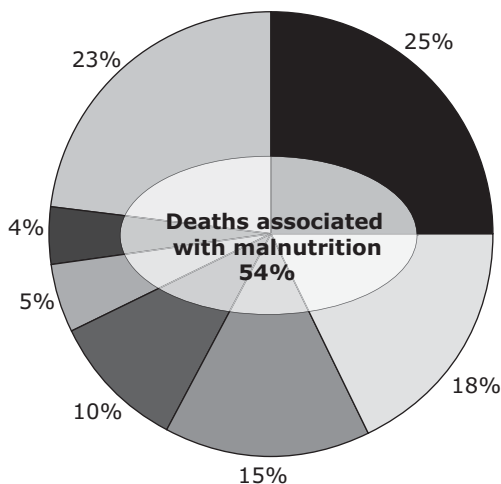
Foods and fluids during diarrhoea are very important. The lists provided in this manual are meant to serve as a guide and can not include all appropriate food and beverages for all local situations around the world. Food and drink vary from country to country and region to region. The health worker is 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.

Annex 6

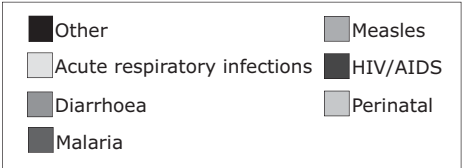
Clinical Management of Acute Diarrhoea

A WHO/UNICEF Joint Statement

Two recent advances in managing diarrhoeal disease — newly formulated oral rehydration salts (ORS) containing lower concentrations of glucose and salt, and success in using zinc supplementation — can drastically reduce the number of child deaths. The new methods, used in addition to prevention and treatment of dehydration with appropriate fluids, breastfeeding, continued feeding and selective use of antibiotics, will reduce the duration and severity of diarrhoeal episodes and lower their incidence. Families and communities are key to achieving the goals set for managing the disease by making the new recommendations routine practice in the home and health facility.



Major causes of death among children under five in developing countries, 2002



Sources: For cause-specific mortality: *The World Health Report 2003*, WHO, Geneva. For malnutrition: Pelletier, D. L., E. A. Frongillo, and J. P. Habicht, 'Epidemiologic evidence for a potentiating effect of malnutrition on child mortality', *American Journal of Public Health*, vol. 83, no. 8, August 1993, pp. 1130-1133.

Note: The figures for proportional mortality related to children under five are currently under review by UNICEF and WHO.

Acute Diarrhoea Still a Leading Cause of Child Deaths

Though the mortality rate for children under five suffering from acute diarrhoea has fallen from 4.5 million deaths annually in 1979 to 1.6 million deaths in 2002, acute diarrhoea continues to exact a high toll on children in developing countries.

Oral rehydration salts (ORS) and oral rehydration therapy (ORT), adopted by UNICEF and WHO in the late 1970s, have been successful in helping manage diarrhoea among children. It is estimated that in the 1990s, more than 1 million deaths related to diarrhoea may have been prevented each year, largely attributable to the promotion and use of these therapies. Today, however, there are indications that in some countries knowledge and use of appropriate home therapies to successfully manage diarrhoea, including ORT, may be declining.

The Goals

The revised recommendations will help reduce mortality from diarrhoea, in line with global goals that aim to:

- ▲ Reduce by one half deaths due to diarrhoea among children under five by 2010 compared to 2000 ('A World Fit for Children', outcome document of the UN Special Session on Children)
- ▲ Reduce by two thirds the mortality rate among children under five by 2015 compared to 1990 (United Nations Millennium Development Goals)

Joint Statement

More than 1.5 million children under five continue to die each year as a result of acute diarrhoea. The number can be dramatically reduced through critical therapies such as prevention and treatment of dehydration with ORS and fluids available in the home, breastfeeding, continued feeding, selective use of antibiotics and zinc supplementation for 10–14 days.

These new recommendations, formulated by UNICEF and WHO in collaboration with the United States Agency for International Development (USAID) and experts worldwide, take into account new research findings while building on past recommendations. Success in reducing death and illness due to diarrhoea depends on acceptance of the scientific basis and benefits of these therapies by governments and the medical community. It also depends on reinforcing family knowledge of prevention and treatment of diarrhoea, and providing information and support to underserved families.

Progress and Challenges

New Developments

Recent scientific advances have informed these revised recommendations. They are:

- ▲ Development of an improved formula for ORS solution with reduced levels of glucose and salt, which shortens the duration of diarrhoea and the need for unscheduled intravenous fluids¹
- ▲ Demonstration that zinc supplements given during an episode of acute diarrhoea reduce the duration and severity of the episode,² and
- ▲ Findings that zinc supplementation given for 10–14 days lowers the incidence of diarrhoea in the following 2–3 months³

Many more lives can be saved if these advances are used in conjunction with effective home treatment and use of appropriate health services. To be most effective, these revised recommendations **must become routine practice** both in the home and health facility. (See the Technical Annex on page 6 for additional details.)

Building on Past Successes

ORS, ORT and other components of clinical management of diarrhoea have made a significant contribution to reducing deaths from diarrhoea. However, if the global goals are to be met, there is still much to do.

Family knowledge about diarrhoea must be reinforced in areas such as prevention, nutrition, ORT/ORS use, zinc supplementation, and when and where to seek care. Where feasible, families should be encouraged to have ORS ready-to-mix packages and zinc (syrup or tablet), readily available for use, as needed. Breastfeeding should continue simultaneously with the administration of appropriate fluids or ORS.

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1. Department of Child and Adolescent Health and Development, World Health Organization, 'Reduced osmolarity oral rehydration salts (ORS) formulation – Report from a meeting of experts jointly organized by UNICEF and WHO' (WHO/FCH/CAH/01.22), New York, 18 July 2001 <http://www.who.int/child-adolescent-health/New_Publications/NEWS/Expert_consultation.htm> .
 2. Bahl, R., et al., 'Effect of zinc supplementation on clinical course of acute diarrhoea' – Report of a Meeting, New Delhi, 7-8 May 2001. *Journal of Health, Population and Nutrition*, vol. 19, no. 4, December 2001, pp. 338-346.
 3. Bhutta Z.A., Black, R.E., Brown K. H., et al., 'Prevention of diarrhoea and pneumonia by zinc supplementation in children in developing countries: Pooled analysis of randomized controlled trials', Zinc Investigators' Collaborative Group, *Journal of Paediatrics*, vol. 135, no. 6, December 1999, pp. 689-697.

Recommendations

The revised recommendations emphasize family and community understanding of managing diarrhoea. When they become routine practice, caretakers will act quickly at the first sign of diarrhoea, rather than waiting before treating the child. The aim is that the recommendations become routine practice both in the home and health-care facility.

Mothers and Caregivers Should:

- ▲ Prevent dehydration through the early administration of increased amounts of appropriate fluids available in the home, and ORS solution, if on hand
- ▲ Continue feeding (or increase breastfeeding) during, and increase all feeding after the episode
- ▲ Recognize the signs of dehydration and take the child to a health-care provider for ORS or intravenous electrolyte solution, as well as familiarize themselves with other symptoms requiring medical treatment (e.g., bloody diarrhoea)
- ▲ Provide children with 20 mg per day of zinc supplementation for 10–14 days (10 mg per day for infants under six months old).

Health-Care Workers Should:⁴

- ▲ Counsel mothers to begin administering suitable available home fluids immediately upon onset of diarrhoea in a child
- ▲ Treat dehydration with ORS solution (or with an intravenous electrolyte solution in cases of severe dehydration)
- ▲ Emphasize continued feeding or increased breastfeeding during, and increased feeding after the diarrhoeal episode
- ▲ Use antibiotics only when appropriate, i.e. in the presence of bloody diarrhoea or shigellosis, and abstain from administering anti-diarrhoeal drugs
- ▲ Provide children with 20 mg per day of zinc supplementation for 10–14 days (10 mg per day for infants under six months old)
- ▲ Advise mothers of the need to increase fluids and continue feeding during future episodes.

Health-care workers treating children for diarrhoea are encouraged to provide caretakers with two 1-litre packets of the new ORS, for home-use until the diarrhoea stops. Caretakers should also be provided with enough zinc supplements to continue home treatment for 10–14 days. Printed material

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4. For more details on the management of acute diarrhoea, consult ‘The Treatment of Diarrhoea – A manual for physicians and other senior health workers’, WHO/CAH/03.7, World Health Organization, Geneva.

(including text and illustrations) with advice on preventing and treating diarrhoea at home should accompany the ORS and zinc supplements.

Countries Should:

- ▲ Develop a 3–5 year plan to reduce mortality rates from diarrhoeal diseases
- ▲ Assess progress in controlling diarrhoeal diseases by monitoring usage rates of ORT/ORS, home-based treatment and zinc supplementation
- ▲ Using the media and face-to-face communication, promote and refine messages on diarrhoea prevention, home management of diarrhoea and appropriate care-seeking
- ▲ Prioritize improving the availability of the new ORS solution and zinc supplements through private and public channels
- ▲ Craft suitable strategies to educate health-care workers at all levels about using the new ORS and zinc supplements in treating diarrhoea
- ▲ Promote the availability of a zinc formulation that is cost-effective and easily administered to both infants and children
- ▲ Identify obstacles to the use of ORS, zinc supplements and home-based treatments in managing acute diarrhoea.

Unicef, WHO and Other Partners Will Support These Actions by:

- ▲ Advocating, facilitating and investing resources to ensure country adoption and implementation of these revised recommendations
- ▲ Working with governments and the private sector, including non-governmental organizations and businesses, to rapidly disseminate these recommendations
- ▲ Supplying new ORS and zinc supplements to countries that cannot manufacture them to quality standards
- ▲ Helping with communication efforts aimed at enhancing prevention and management of diarrhoea, including promoting routine use of new ORS and zinc supplements.

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