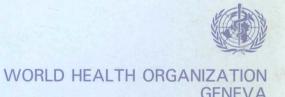


acute diarrhoea

Practical guidelines

Second edition



The treatment and prevention of acute diarrhoea

Practical guidelines

Second edition



WORLD HEALTH ORGANIZATION
GENEVA
1989

First edition 1985 Reprinted 1985, 1986 Second edition 1989

This book is also available in French and Spanish from WHO or from the sales agents listed on the inside back cover. Any part of the book may be copied or translated into other languages for non-profit-making purposes without prior permission from the World Health Organization, provided that two voucher copies of such translations are sent to the Organization. The Organization accepts no responsibility for the accuracy of any such translations. If a translation of the entire work is envisaged, inquiry should be made to the Office of Publications, World Health Organization, 1211 Geneva 27, Switzerland, to ensure that such a translation is not already available.

WHO welcomes comments on this guide and information on experience in its use; these should be addressed to:

Diarrhoeal Diseases Control Programme, World Health Organization, 1211 Geneva 27, Switzerland.

ISBN 92 4 154243 8 © World Health Organization 1989

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

PRINTED IN BELGIUM

6095/6602/6975

88/7719-Ceuterick-16 000

Foreword

This book is intended for health workers who are concerned with the prevention and treatment of diarrhoea, and for their supervisors and trainers. It is a revised and updated version of *Treatment and prevention of acute diarrhoea*. Guidelines for the trainers of health workers (Geneva, World Health Organization, 1985) and contains more information on prevention than the first edition. The guidelines form the technical basis of the module entitled *Treatment of diarrhoea* in the *Supervisory skills training course* of the WHO Diarrhoeal Diseases Control Programme.

The book is divided into six sections. Each of the first five sections is followed by a list of points of essential skills and knowledge required by health workers for the prevention and treatment of acute diarrhoea. All 15 points of essential skills and knowledge are summarized in Annex 8. The Diarrhoea Treatment Chart, in Annex 1, summarizes the approach to management of diarrhoea explained in this book. The chart 1 may be adapted to local conditions and should be available to health workers for reference at all times.

Available from: Diarrhoeal Diseases Control Programme, World Health Organization, 1211 Geneva 27, Switzerland.

Contents

Fo	reword	age v
1	Understanding the problem What is diarrhoea? Acute and chronic diarrhoea Why is diarrhoea dangerous? How does diarrhoea cause dehydration? Treating a child who has diarrhoea ESSENTIAL SKILLS AND KNOWLEDGE: SECTION 1	1 1 2 2
2	Home treatment of a child who has diarrhoea Educating family members about home treatment of a child who has diarrhoea Three rules for home treatment of a child who has diarrhoea ESSENTIAL SKILLS AND KNOWLEDGE: SECTION 2	5
3	Assessment by a health worker of a child who has diarrhoea Examining the child Deciding on appropriate treatment ESSENTIAL SKILLS AND KNOWLEDGE: SECTION 3 Examples of assessment	9 12 13
4	Treatment by a health worker of a child who has diarrhoea Ingredients of oral rehydration salts (ORS) How to prepare ORS solution How to treat a child who has diarrhoea Recording data on the child ESSENTIAL SKILLS AND KNOWLEDGE: SECTION 4	18 19 20 24
5	Prevention of diarrhoea Breast-feeding Improved weaning practices Use of plenty of clean water Hand-washing Use of latrines Proper disposal of the stools of young children Immunization against measles What health workers can do to support preventive practices ESSENTIAL SKILLS AND KNOWLEDGE: SECTION 5	25 26 27 27 28 28 29 29
6	Things to remember about the treatment and prevention of diarrhoea	31
1	Diarrhoea Treatment Chart	32 37

Aı	nnexes (continued)	
3	How to tell if a child is undernourished	38
4	What a health worker should do when packets of oral rehydration salts are	
	not available	39
5	Oral rehydration using a nasogastric tube	42
6	Intravenous therapy for severe dehydration	43
	Antibiotics used to treat diarrhoea caused by specific illnesses	
8	Check-list of points of essential skills and knowledge	49

1. Understanding the problem

What is diarrhoea?

The number of stools normally passed in a day varies with the diet and age of a person. 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 mothers may say that the stools have a strong smell 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 defined as three or more loose or watery stools passed 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 the age of 6 months who are drinking cow's milk or infant feeding formulas.

Frequent passing of normal stools is not diarrhoea.

Babies who are breast-fed often have stools that are soft; this is not diarrhoea.

Acute and chronic diarrhoea

Acute diarrhoea starts suddenly, and may continue for several days. It is caused by infection of the bowel. This book deals with the treatment and prevention of acute diarrhoea.

Chronic diarrhoea is diarrhoea that lasts for more than 2 weeks.

Why is diarrhoea dangerous?

Diarrhoea can cause undernutrition and death.

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

Diarrhoea is more serious in people who are undernourished. It can cause undernutrition and can make existing undernutrition worse because during diarrhoea:

- nutrients are lost from the body;
- the person may not be hungry; and
- a mother may not feed a child who has diarrhoea. Some mothers may withhold food for some days after the diarrhoea is better.

To reduce this undernutrition, foods should be given to children who have diarrhoea as soon as they will eat.

How does diarrhoea cause dehydration?

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

When the bowel is healthy, water and salts pass from the bowel into the blood. The water and salts can then be used by the body. 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 is passed out of the body, in the stools.

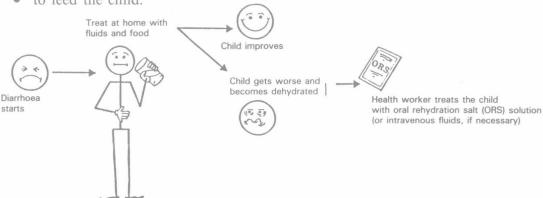
This larger than normal loss of water and salts from the body results in dehydration. It occurs when the output of water and salts is greater than the input. The more diarrhoea stools a person passes, the more water and salts he or she loses. Dehydration can be made worse by vomiting, which often accompanies diarrhoea.

Dehydration occurs faster in infants and young children, in hot climates, and when a person has fever.

Treating a child who has diarrhoea

The most important factors in the treatment of diarrhoea are:

- to prevent dehydration from occurring if possible;
- to treat dehydration quickly and well if it does occur; and
- to feed the child.



Prevention of dehydration

Dehydration can usually be prevented in the home if the child drinks more fluids than usual as soon as the diarrhoea starts. A child should be given one of the fluids recommended for home treatment of diarrhoea in your area. Food-based fluids, for example, gruel, soup, or rice water, can be used. The fluids or solutions recommended in your area for preventing dehydration in the home will depend on:

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

Treatment of dehydration

If dehydration occurs, the child should be taken to a community health worker or health centre for treatment. The best treatment for dehydration is oral therapy with a solution made with oral rehydration salts (ORS). This treatment will be described in this book. This book talks about treating children, but the same treatment is also good for adults with diarrhoea. For treating dehydration, ORS should always be used if possible.

Feeding

While the child is ill with diarrhoea, he or she should frequently be offered small amounts of nutritious, easily digestible food. Feeding during the diarrhoea episode provides nutrients the child needs to be strong and to grow, and helps prevent weight loss. The extra 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 the weight lost during the illness.

Other treatments

There are no drugs available at present that will safely and effectively stop diarrhoea. Antibiotics are not effective against most organisms that cause diarrhoea. They rarely help and can make some people sicker in the long term. Their indiscriminate use may increase the 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 in Annex 7.

Adsorbants (such as kaolin, pectin, and activated charcoal) are not useful for the treatment of acute diarrhoea.

Antimotility drugs (such as tincture of opium) may be harmful, especially for children below 5 years of age. They temporarily reduce cramps and pain but delay the elimination from the body of the organisms that cause the diarrhoea, and may prolong the illness. They can be dangerous, and even fatal, if used incorrectly in infants.

ESSENTIAL SKILLS AND KNOWLEDGE: SECTION 1

The health worker should be able to do the following:

- Define diarrhoea in a way that is appropriate to his or her work setting.
- Distinguish between acute and chronic diarrhoea.
- Explain why diarrhoea is dangerous.
- Explain how diarrhoea causes dehydration.
- Describe the most important parts of the treatment of diarrhoea.

2. Home treatment of a child who has diarrhoea

Educating family members about home treatment of a child who has diarrhoea

Mothers and other family members can often treat children who have diarrhoea with fluids and foods that they have at home. Health workers can help by showing mothers how to do this.

There are three rules for treating diarrhoea in the home. Whenever a child gets diarrhoea, the mother (or any other family members who care for the child) should follow these rules. Briefly, the rules are:

- increase fluids;
- continue to feed the child;
- take the child to a health worker if he or she is not getting better.

These rules are also given in Treatment Plan A on page 21, and in *How to treat diarrhoea at home*, the mother's card given in Annex 2, page 37.

Steps for teaching families

Health workers should give information about home treatment 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.

- Bear in mind the community's beliefs about diarrhoea and ways of treating
 it. Relate your advice to local practices, and use words that the mother will
 understand.
- Explain the three rules for treating diarrhoea at home.
- Show the mother what to do (for example, show her how much fluid to give the child after each stool).
- Use teaching aids that are familiar (for example, show the mother how to look for sunken eyes on her own child; use easily available containers to demonstrate how to mix ORS).
- Let the mother show you what she is learning (for example, how to feed the fluid with a spoon). In this way you will be sure that she can do it, and it will help her to remember.

- Ask the mother to tell you, in her own words, the things that she has learned but not practised. Again, this will help her to remember. For example, she can tell you what food she will give her child and how often.
- Ask the mother if she has any questions, and try to answer them.
- Ask her about any problems she may have in following the three rules. Listen to what she says and try to help her find a solution to any problem.
- Tell the mother what to expect (for example, how long it will take for her child to recover).

Three rules for home treatment of a child who has diarrhoea

RULE 1: GIVE THE CHILD MORE FLUIDS THAN USUAL

What fluids?

Give the recommended home fluid or food-based fluids, such as gruel, soup, or rice water.

If an infant is breast-fed — continue to breast-feed and try to do so more often than normal (at least every 3 hours).

If an infant is not breast-fed — dilute milk feed with twice the usual amount of water. Offer the milk feed at least every 3 hours.

How much fluid?

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

RULE 2: CONTINUE TO FEED THE CHILD

What foods?

Weaning starts when a child is 4-6 months old.

Give a child of above this age foods with the highest amount of nutrients and calories relative to bulk. These foods 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 richer in energy. Dairy products and eggs are also suitable. Fresh fruit juices and bananas are helpful because they help replace the potassium lost during diarrhoea.

In areas where vitamin A deficiency is common, foods that are rich in vitamin A are recommended for any child above 4–6 months old. These foods include liver, dairy products, and small, dried, whole fish. Red palm oil, which contains a very high amount of provitamin A, can also be added to foods.

Yellow vegetables (such as pumpkin, carrots and yellow sweet potatoes), dark green leafy vegetables (such as amaranth, spinach, and cassava leaves), and yellow fruits (such as mango and paw paw) also contain a lot of vitamin A. However, because many of these fruits and vegetables are bulky, it is preferable to give them in small amounts during and immediately after diarrhoea, and to give them only if the other foods that contain vitamin A are not available.

Avoid:

- High-fibre or bulky foods, such as coarse fruits and vegetables, fruit 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 make diarrhoea worse.

How much food?

Encourage the child to eat as much as he or she wants. Offer food every 3 or 4 hours (five to seven times each day) or more often to a young child. Small, frequent feeds 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 to reach a normal weight for their height.



How to prepare the food

Prepare foods by cooking well, fermenting, mashing or grinding. This will make them easier to digest.

Give freshly prepared foods to minimize the chance of contamination. If previously prepared foods must be offered, first reheat them to boiling-point.

Why feed the child?

Starving a child who has diarrhoea can cause undernutrition, or make existing undernutrition worse. Mothers may withhold food, believing this will decrease the diarrhoea. But it is more important to give the child the nutrients he or she needs to stay strong and to 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.

RULE 3: TAKE YOUR CHILD TO THE HEALTH WORKER IF HE OR SHE IS NOT GETTING BETTER

If a child passes many stools, is very thirsty, or has sunken eyes, the child is probably dehydrated. The child may need more treatment than the mother can give at home.

The mother should take the child to a health worker if the child shows any of the following signs:

- passes many stools
- is very thirsty
- These three signs suggest the child is dehydrated.
- has sunken eyes
- has a fever
- does not eat or drink normally
- seems not to be getting better.

ESSENTIAL SKILLS AND KNOWLEDGE: SECTION 2

• The health worker should be able to explain to family members the three rules for home treatment of diarrhoea. These are: to increase fluids; to continue to feed the child; and to take a child who is not getting better to the health worker.

3. Assessment by a health worker of a child who has diarrhoea

Examining the child

When a child comes to a health worker or 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, such as measles, that is often accompanied by diarrhoea.

A list of the questions that the health worker should ask, the conditions to feel for, and the things to look for are presented here and given on the assessment chart shown on page 10, and in Annex 1.

As you read this section, refer to the assessment chart on page 10. When you examine a child, note your findings and see into which column on the assessment chart they fall.

Ask the following questions

- How many liquid stools per day has the child been passing? For how long has the child had diarrhoea? Is there blood (more than 1 or 2 streaks) in the stools?
- Has the child been vomiting?
 If so, has the child vomited more than a small amount?
 How frequently has the child vomited?
- Is the child able to drink?
 If so, is the child thirstier than usual?
- Has the child passed urine in the last 6 hours?
 If so, is it a normal amount or a small amount?
 Is it darker than usual?

	HOW	TO ASSESS	HOW TO ASSESS YOUR PATIENT		
		FOR DEHYDRATION	7	FOR OTHER PROBLEMS	ROBLEMS
	A	В	O		
1. ASK ABOUT: DIARRHOEA	Less than 4 liquid stools per day	4 to 10 liquid stools per day	More than 10 liquid stools per day	Longer than 14 days duration	
VOMITING THIRST URINE	None or a small amount Normal Normal	Some Greater than normal A small amount, dark	Very frequent Unable to drink No urine for 6 hours	DOOD III III DOOD	
2. LOOK AT: CONDITION	Well, alert	Unwell, sleepy or irritable	Very sleepy, unconscious,	Severe undernutrition	
TEARS EYES MOUTH and	Present Normal Wet	Absent Sunken Dry	Absent Very dry and sunken Very dry		
TONGUE BREATHING	Normal	Faster than normal	Very fast and deep		
3. FEEL: SKIN PULSE	A pinch goes back quickly Normal	A pinch goes back slowly Faster than normal	A pinch goes back very slowly Very fast, weak, or you cannot		
FONTANELLE (in infants)	Normal	Sunken	Very sunken		
4 TAKE TEMPERATURE				Fever - 38 5°C (or 101°F) or greater	reater
5. WEIGH IF POSSIBLE	Loss of less than 25 grams for each kilogram of weight	Loss of 25-100 grams for each kilogram of weight	Loss of more than 100 grams for each kilogram of weight		
6 DECIDE	The patient has no signs of	If the patient has 2 or more	If the patient has 2 or more	IF YOUR PATIENT HAS: THEN:	Z.
	dehydration	of these signs, he has some dehydration	of these danger signs, he has severe dehydration	Blood in the stool and antibic diarrhoea for less than 14 days	Treat with an appropriate oral antibiotic for shigella dysentery. If this child is also
	Use Plan A	Use Plan B	Use Plan C		 dehydrated, severely undernourished, or less than 1 year of age,
				reasss in 24 For th Child, of sev	reassess the child's progress in 24 - 48 hours. For the severely undernourished child, also refer for treatment of severe undernutrition.

Show the mother how to cool the child with a wet cloth and fanning.

Fever - 38.5°C (or 101°F) or greater

Continue feeding and refer for treatment.

Diarrhoea for longer than 14 days with or without blood Severe undernutrition Look for and treat other causes (for example, pneumonia, malaria).

Look for the following conditions

- What is the child's general condition?
- Is the child
 - well and alert?
 - unwell, sleepy, or irritable?
 - very sleepy, floppy, or unconscious?
 - having fits?
 - severely undernourished? (See Annex 3, How to tell if a child is undernourished, on page 38).
- Does the child have tears when he or she cries?
- Are the child's eyes normal, sunken, or very dry and sunken?
- Are the child's mouth and tongue wet, dry, or very dry?
- Is the child's breathing normal, faster than normal, or very fast and deep?

Feel for the following

• When the skin is pinched, does it go back quickly, slowly, or very slowly (taking 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 if a child is either undernourished or obese.

- In a severely undernourished child, the skin may go back slowly, even if the child is not dehydrated.
- In an obese child, the skin may go back quickly even if he or she is dehydrated.
- Can the pulse be felt?
 - If so, is it normal, faster than normal, very fast, or weak?
- Is the fontanelle (the soft spot on top of the head of infants) normal, sunken, or very sunken?

Note: This is a helpful sign only in children whose fontanelle is not yet closed (usually children under 12 months old).

Weigh the child, if a weighing scale is available

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

Has there been any loss of weight during the diarrhoea?

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

Were 25–100 g lost for each kg of the child's weight?

Were more than 100 g lost for each kg of weight?