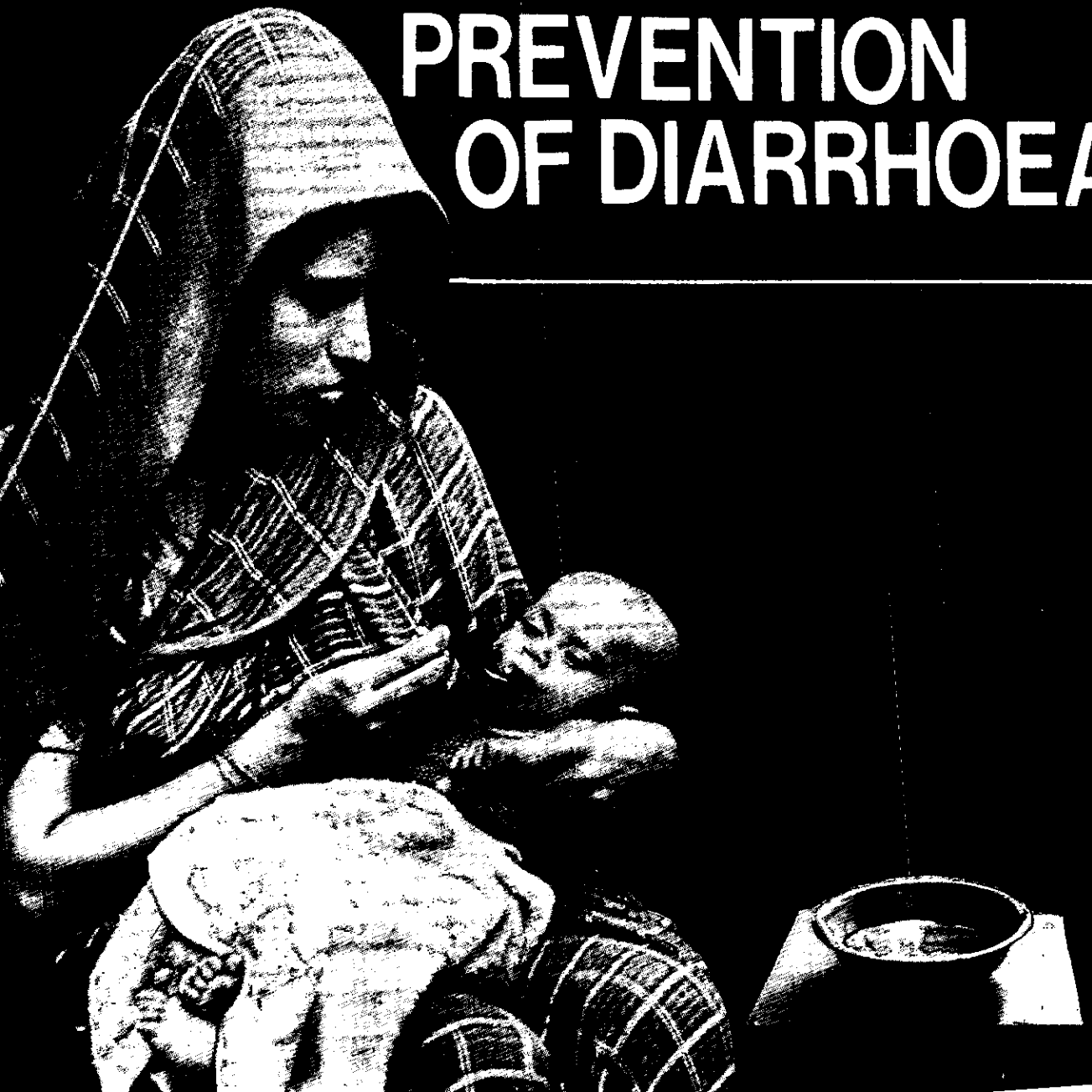




**MANUAL ON TREATMENT
AND PREVENTION OF DIARRHOEA**

ICDDR,B

MANUAL ON TREATMENT AND PREVENTION OF DIARRHOEA



What to do in case of a diarrhoea or cholera epidemic?

What is an epidemic ?

When a group of people in a particular area becomes affected with a similar type of diarrhoea, and people die within a few hours of disease, this can be called a diarrhoea epidemic.

How will you know ?

If anybody over age three in your locality dies within 12–36 hours of diarrhoea onset, you may suspect a diarrhoea epidemic.

What will you do?

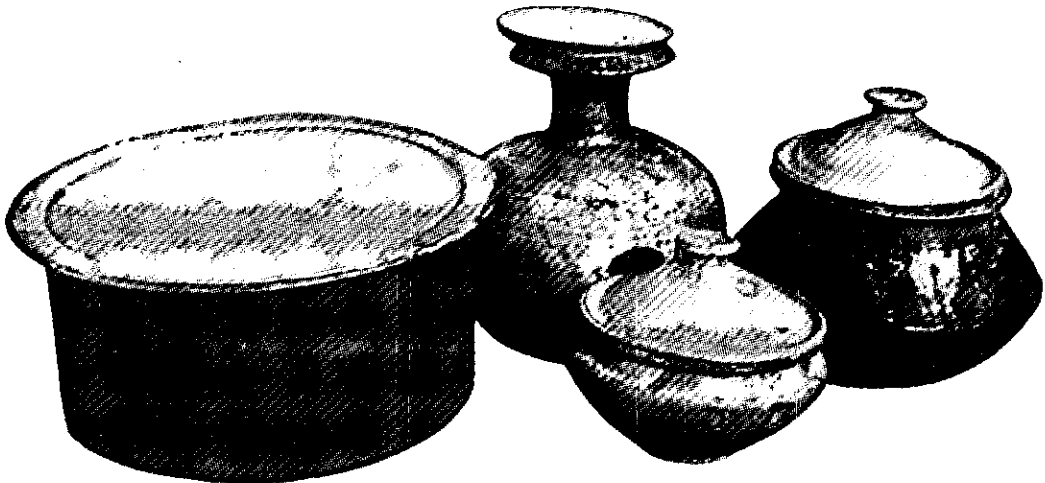
1. Immediately inform the area Sanitary Inspector/Health Inspector and Upazilla Health and Family Planning Officer.
2. Train every household in your area in preparation and use of ORS. Remember that ORS should be started promptly as soon as diarrhoea begins, and should be continued until the diarrhoea stops.
3. Seek help of the Chairman and Members of the Union Council, to form a Village Volunteer Corps.
4. Collect information about incidence of disease and death, and report the same day to the Sanitary Inspector or Health Inspector. The report must contain details about name, address, time of disease onset, time and date of diseases.
5. Make arrangements to establish a makeshift hospital or treatment centre in a place such as a school building, Union Council office, etc., some place where a few patients at a time can be treated. Volunteers are very important in such a situation.
6. Treat severely dehydrated patients with intravenous saline.

POINTS TO REMEMBER

Before you begin to teach, please remember the following:

1. A mother is likely to have her own ideas about diarrhoea management. If you wish to gain confidence, listen to her, and then try to convince her with sound reasoning.
2. Do not be impatient if a mother fails to understand or to follow your instructions on how to prepare ORS. Be patient, and repeat the instructions.
3. Praise and support her as she begins to understand the message.
4. Listen to any objection she raises. Do not dismiss it outright. Try to find out what she believes, and then to reason with her. Do not argue.
5. The words of a friend usually are more acceptable than are those of a visitor.
6. Be enthusiastic. Share the favourable experiences you have had with ORS. For example, talk about children and villagers you have treated successfully.
7. Make your conversation interesting. Nobody likes a boring teacher. Use simple jokes and family stories to make your lessons more interesting. Acceptance or rejection will depend on how you deliver the message.
8. Mothers may have other complaints than diarrhoea. Listen patiently, and try to help.

5. Always bury the faeces of diarrhoea patients.
6. Supplementary feeding should be given a baby when its mother fails to produce enough breast milk. Wash the nipple before each feeding.
7. Milk should be boiled and all food heated before eating or giving it to a child.
8. Wash children's hands before they eat. Keep children's fingernails trim and clean.
9. Never eat or serve stale food.
10. Keep food covered, to prevent contamination by flies and dust.
11. Vegetables and fruits, eaten raw, should be washed with safe water.
12. It is better to isolate a diarrhoea patient from other family members, especially children.



Keep food always covered

Hands should be washed properly with soap or ash before handling food.



2. Some mothers handle food without washing their hands after cleaning a child or washing soiled clothes of patients. This helps spread the disease. Hands should be washed properly before eating or handling foods, to prevent disease spread.
3. Never wash soiled clothes in a pond or river. Instead, wash clothes away from the source of water, somewhere they cannot contaminate the water source. Do not defaecate or wash the backside after defaecation near a pond or river, as this may contaminate the water. Use of contaminated water for washing utensils, vegetables and for bathing may infect others. (Be careful not to swallow this water while bathing).
4. A designated place that cannot contaminate the water source should be used for defaecation. It is possible to install, at a reasonable price, a sanitary latrine which can be cleaned with a small amount of water. Such latrines also help reduce fly nuisance. Each family member, especially children, should be taught to use the latrine properly. When sanitary latrines are not available, pit hole latrines can be installed away from ponds, canals, rivers or tubewells. After defaecating each time the stool should be covered by ash or mud, to prevent flies breeding.

PREVENTION OF DIARRHOEA

Diarrhoea patients' faeces carry innumerable germs. Anyone ingesting these germs through food or water will get diarrhoea. The presence of diarrhoea patients in the family or neighbourhood is likely to infect others. The following measures should be taken to prevent the spread of diarrhoea:

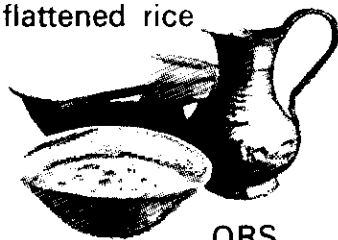
1. If possible, use tubewell water for drinking. Water from rivers, ponds or wells should be boiled and cooled before drinking. Wash hands and utensils with soap/ash and clean water, before eating or handling food, especially during diarrhoea epidemics.



Continue breast feeding even in diarrhoea

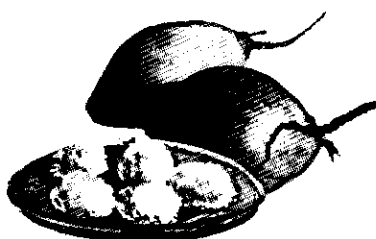
GREEN COCONUT WATER, BANANAS AND PLAIN WATER SHOULD BE GIVEN TO PATIENTS, ALONG WITH ORS.

Soaked flattened rice



ORS

Green coconut

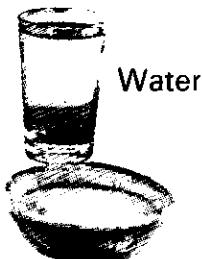


Puffed rice

Banana



Rice water



Water

Dal soup

A DIARRHOEA PATIENT'S DIET

There is a common misbelief that food aggravates diarrhoea. Unfortunately, this misconception causes restriction or withholding of food to diarrhoea patients. Even breast feeding sometimes is stopped. There is no justification for such measures. Indeed, lack of nourishment worsens a diarrhoea patient's condition. Children under age five, who are growing rapidly, need additional food. All diarrhoea patients should be allowed normal food during diarrhoea.

Breast-fed babies should continue to suckle. Babies under age 2 should continue to suckle and to eat the foods mentioned below. There is no substitute for mother's milk. It is wrong to believe breast milk can harm a child. After a diarrhoea episode, additional food should be given, to help, the patient get well. The following food is recommended during and after diarrhoea, to aid quick recovery and regaining of health:

1. Dal and rice khichuri
2. Soft rice
3. Suji halwa (with milk and sugar)
4. Dal soup
5. Payesh (rice pudding)
6. Ripe banana
7. Ripe papaya
8. Boiled potato
9. Boiled sweet potato
10. Mixed vegetable soup
11. Fruits
12. Egg, fish, chicken, etc.
13. Green coconut water

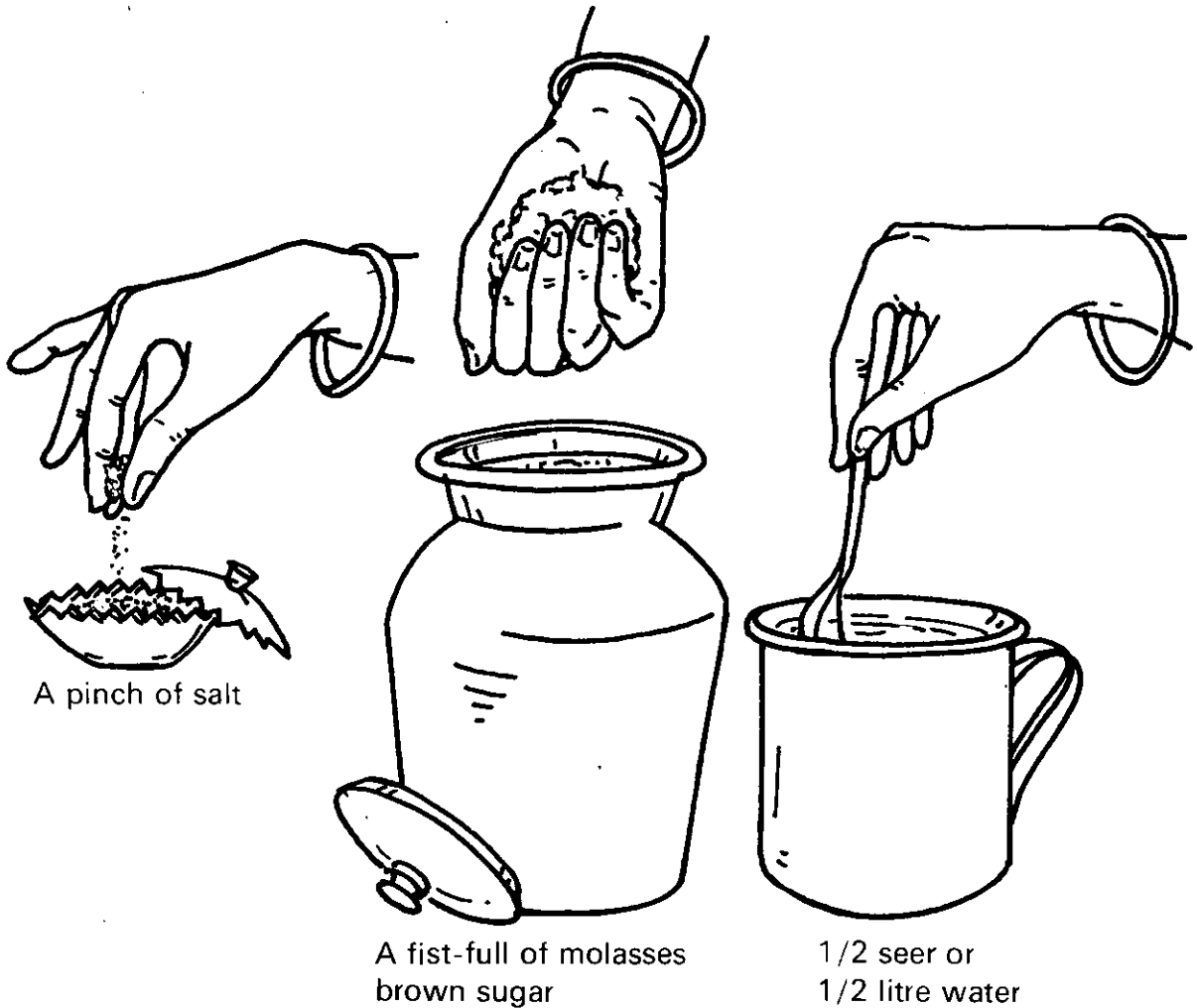
8. ORS should not be used more than 12 hours after it has been prepared. Any leftover ORS, should be thrown away, and a new solution should be prepared.
9. Normal food should continue during diarrhoea. If available, green coconut water and bananas also should be given.
10. If ORS packets are available, follow the preparation instructions printed on the packet.
11. A patient should be taken to a doctor or a nearby health centre if, despite treatment, his/her condition deteriorates and he/she develops the following signs and symptoms: abdominal distension, convulsion, respiratory distress, suppression of urine, etc.

ORS should be given to a child who is sitting, not lying down



6. It is better to give a little more than a little less ORS.
7. Babies should be fed ORS with a spoon. They should not be fed while lying, as they might choke.

PREPARATION OF HOME-MADE ORAL REHYDRATION SOLUTION (ORS)



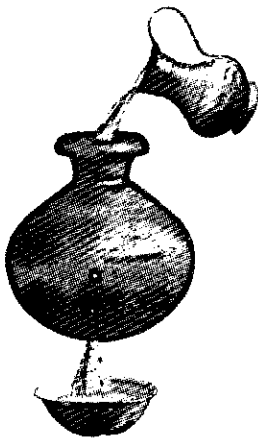
All these should be mixed together.

symptoms between 4 and 16 are serious. If they appear, a patient immediately should be referred to the nearest treatment centre or to a doctor. If no medical help is available, a patient should be treated immediately and continually with ORS. However, when the following symptoms are present, a patient should not be treated at home:

1. Convulsions;
2. Unconsciousness;
3. No urination for more than 24 hours;
4. Distended abdomen;
5. Diarrhoea persisting for more than 72 hours after treatment with ORS;
6. Respiratory difficulty;
7. High fever;
8. Persistent vomiting.

TREATMENT OF DIARRHOEA

The simplest diarrhoea treatment is to use ORS to replace the salts and fluids lost from the body. ORS must equal the volume of vomitus and stools passed. Adminis-



The amount of ORS a patient drinks should equal the amount of stool and vomitus passed

their babies during diarrhoea. More than two loose stool motions in 24 hours should be considered as diarrhoea, and should be treated immediately. The patient should drink 1/4 seer (1/4 litre) of ORS for each motion and vomiting. The patient also should be allowed to eat normal food. Treated in this way, patients gradually will improve. ORS should be used within 12 hours of preparation, to prevent it from spoiling.

Government and WHO-recommended packets contain :

Sodium chloride. (table salt)	1.75 gr.
Sodium bicarbonate	1.25 gr.
Potassium chloride	0.75 gr.
Sugar	20.00 gr.

As noted above, to make ORS, the packet contents should be dissolved in 1/2 seer (or 1/2 litre) of safe drinking water. However, if ORS packets are unavailable, ORS may be prepared according to the directions given in page 10.

USE OF ORS

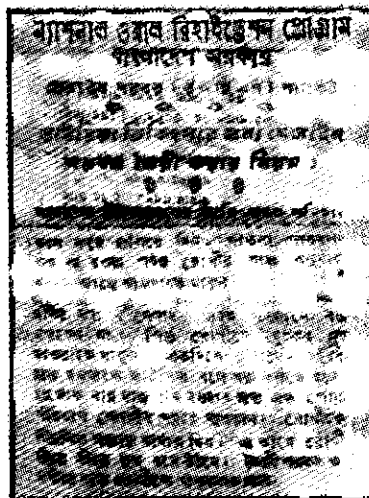
1. ORS feeding should start as soon as diarrhoea begins. Any delay may aggravate the patient's condition.
2. The amount of ORS given should approximately equal the volume of vomitus and stool passed. (In case of delay in starting treatment with ORS, the patient should drink more initially.)
3. ORS should not be stopped in case of vomiting. Small amounts should be given frequently to replace losses.
4. Drinking ORS must continue as long as diarrhoea continues. If diarrhoea persists for more than 72 hours, the patient should be referred to the nearest health centre.
5. Plain drinking water should be given in-between ORS feedings, especially for young children.

tration of ORS should start as soon as diarrhoea is detected, and should continue until diarrhoea stops. Most diarrhoea patients can be treated with ORS alone, without any other medicine.

PREPARATION OF ORAL REHYDRATION SOLUTION (ORS)

Saline packets containing the WHO-recommended formula (WHO/UNICEF/NORP/Gono Shastho Kendro) are available from health workers and shops. ORS can be prepared easily, by following the directions provided on the packets. It also can be prepared with ingredients available at home. Before preparing ORS, hands and utensils should be washed properly with soap or ash.

WHO-RECOMMENDED ORS PACKET



Made by:
NORP, Bangladesh
46, Tejkunipara, Airport Road
Dhaka

Photograph of a ORS packet

HOW TO MAKE ORS

Dissolve the packet contents in $1/2$ seer (or $1/2$ litre) of tube well water or boiled cold water. The patient should drink this solution until diarrhoea stops. ORS should not be stopped if vomiting occurs. Mothers should be encouraged to breast feed



Loose skin

13. Rapid breathing;
14. Muscle cramps (especially in adults);
15. Convulsions;
16. Unconsciousness.

The above symptoms are caused by loss of fluids and "electrolytes" (salts) from the body. It already has been mentioned that loss of body fluid reduces the blood volume, causing the blood to become concentrated or thickened. This causes reduction in urine amount, wrinkled fingers, low body temperature and loose skin. If this condition is not corrected, patients may develop convulsions.

Treating a patient promptly with ORS can prevent most of these symptoms. The



Stool of diarrhoea patient

If diarrhoea is treated promptly and adequately with ORS, these symptoms will not develop. However, without proper treatment, the patient's condition may deteriorate, and the following symptoms may appear:

4. Sunken eyes;
5. Sunken fontanelle (in babies under 18-months)
6. Hoarse voice;
7. Dry tongue;
8. Loose skin;
9. Reduced urination;
10. Wrinkled fingers;
11. Low body temperature,
12. Feeble pulse, gradually becoming imperceptible,

WHAT HAPPENS IN DIARRHOEA?

Fluid is essential for life. Seventy percent of our body is composed of fluids. All essential body components, such as blood, muscle, fat, skin, bones, etc., contain fluid, in different proportions. In diarrhoea, the body loses salts and fluid via the stool. In severe diarrhoea, the body loses fluid very quickly, a situation that causes dehydration. Lacking sufficient fluid, the blood becomes thick. This affects its normal flow. Diarrhoea is, in most cases, manifested by:

1. Loose motions, generally associated with vomiting;
This causes dehydration. In the initial stage, its signs and symptoms are:
2. Strong thirst;
3. Progressive weakness;

Drinking, bathing and washing spread diarrhoea



HOW DIARRHOEA OCCURS?

Diarrhoea generally is caused by some "pathogenic" or disease-causing organism present in diarrhoea stools. Unsanitary habits or flies may contaminate food and water. When consumed, such contaminated food or water, can cause diarrhoea.

TYPES OF DIARRHOEA STOOL

Diarrhoea stool may range from loose, semi-liquid to a liquid consistency. It may contain mucus, blood or both.

Unsanitary habits and use of polluted water



INTRODUCTION

Diarrhoea is very widespread in Bangladesh and similar developing countries. Every year, enormous numbers of people, especially children, suffer from diarrhoea. During diarrhoea, essential salts and fluids are lost from the body, resulting in dehydration and other complications. Although, compared to other diseases, management of diarrhoea is simple, diarrhoea still claims the lives of millions of children every year.

Our objective is to teach patients, and their relations or attendants the basic principles of diarrhoea management. This manual can help teach them how to manage diarrhoea in their homes.

WHAT IS DIARRHOEA ?

Loose or watery frequent movement of the bowels is called diarrhoea. Even one big volume of loose motion can be defined as diarrhoea.

Generally, during diarrhoea the fluid in the stool increases and the patient purges more frequently. Vomiting also may occur. Depending on the locality, the condition is known by different names. In some cases, mucus, blood or both may be seen in diarrhoea stool. This condition is known as dysentery. Diarrhoea and dysentery should be treated immediately.

PREFACE

This manual has been designed for primary health care personnel. This manual will help health personnel teach mothers and other family members how to prepare Oral Rehydration Solution (ORS) for treating diarrhoea.

Efforts have been made to keep the language of this manual as simple as possible, without omitting essential information. Use of scientific terms has been avoided, unless absolutely necessary, to make it easier for non-medical users.

In preparing the manual, the ideas and practical experiences of many persons—including paramedics working with diarrhoea patients in the field, doctors working in treatment centres and research scientists—have been utilized.

Users are encouraged to communicate their comments on the manual to the Associate Director, Training, Extension and Communication, ICDDR,B for improvement of the manual in future edition.

Finally, the ICDDR,B acknowledges the help, time, ideas, skill and labour contributed by many in preparing this manual.

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5. Bangladesh Rural Advancement Committee (BRAC)
6. CARE, Bangladesh
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