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Diarrhoea Training Unit

Director's Guide

World Health Organization

1986

Diarrhea - therapy
Patient care team
Health occupations - education
Hospital departments - organization
Educational institutions

Diarrhoea Training Unit Director's Guide

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INTRODUCTION

Acute diarrhoeal diseases are a leading cause of childhood mortality and morbidity in the developing world. Dehydration from acute diarrhoeas of all etiologies and in all age groups can be treated safely and effectively by the simple method of oral rehydration therapy (ORT). ORT has made it possible to undertake a global effort to reduce deaths from acute diarrhoeas and diarrhoea-associated malnutrition.

Physicians and health staff around the world must be introduced to and trained in proper diarrhoea treatment which includes use of ORT. Many have already learned proper treatment procedures at diarrhoea training units. In the future many more will be trained at these units. It is essential that training in proper diarrhoea case management be done in every country.

WHAT IS A DIARRHOEA TRAINING UNIT?

> A unit in a hospital which routinely treats many cases of acute childhood diarrhoea and conducts training in diarrhoea treatment.

In a large hospital where treatment of diarrhoea cases is a major activity, the unit may be assigned a permanent area in the facility. In other hospitals, a diarrhoea training unit may be set up or expanded as the need occurs, particularly during the high season for diarrhoea.

WHAT DOES A DIARRHOEA TRAINING UNIT DO?

A diarrhoea training unit develops the skill and confidence of physicians and other health workers so they can give proper therapy to cases of diarrhoea. When participants attend clinical training, they develop skills in management of diarrhoea, especially use of ORT. They learn to treat cases, manage complicated cases, and teach others how to do it. They learn the effectiveness of ORT as a therapeutic tool. They become confident and knowledgeable enough to overcome resistance to the modern methods from other health professionals or from patients and their families.

Participants from hospitals throughout the country are trained at the diarrhoea training unit to support the national programme for control of diarrhoeal diseases. Some countries may have several diarrhoea training units. The number of participants being trained in a unit at a time may range from one to fifteen.

Diarrhoea training units with adequate facilities and accommodations for a large number of participants also may train participants from other countries.

Some diarrhoea training units may conduct clinical research on various aspects of diarrhoea management. But the primary purpose of a diarrhoea training unit is always to teach participants to treat diarrhoea properly and to give them experience doing it.

WHY WAS THIS GUIDE DEVELOPED?

WHO realizes that diarrhoea training units face many problems in trying to provide training that is certain to give participants this level of skill and the essential technical knowledge. Hands-on training, which requires each participant to treat several patients with guidance and support from the staff, can be very effective. However, hands-on training places considerable demands on the staff and, if not organized well, can be disruptive to the normal operation of a facility. It is also difficult to select and provide the most important technical knowledge in the limited time available for training.

Effective training requires substantial time and effort to plan well. There are many decisions to be made about the skills to be taught, the

information to be covered, the activities of the participants, instructors, schedules, operational arrangements, supplies . . . These decisions and arrangements are assigned to the director of training (the individual may or may not have this title), who often has many important and demanding responsibilities.

This guide was written to help the director of a diarrhoea training unit plan and conduct effective training. It describes a range of ways that training could be done and the most important things to include. It outlines decisions that need to be made and makes some suggestions. It contains lists of steps for planning and conducting the training. It contains information that will be helpful to anyone who is setting up or running a diarrhoea training unit.

HOW IS A DIARRHOEA TRAINING UNIT ESTABLISHED?

If a facility shows interest in hosting training for physicians and nurses in diarrhoea case management, it may be possible to set up a diarrhoea training unit there.

There should be many patients, especially infants and young children, who come to the facility to be treated for acute diarrhoea and dehydration, so that each participant will be able to be trained by actually treating patients. It is not necessary to conduct large courses for many participants at a time, however. A diarrhoea training unit could host just one or two participants at a time.

Dedication to the practice of proper diarrhoea case management including the use of ORT, and a high level of skill among the staff are other prerequisites. The unit should be in a geographic location which will be accessible for the participants who come for training.

If the facility meets these basic criteria, it is advisable that the person who will be responsible for the training attend a training session at a well-run diarrhoea training unit. That individual will see how a training unit operates and receive information on the support available from WHO.

By learning from the experience of other diarrhoea training units and by following this guide, the training director can plan and conduct this important training for health professionals.

WHO IS TRAINED AT A DIARRHOEA TRAINING UNIT?

The following types of people will come to diarrhoea training units:

1. Senior pediatricians from central or provincial hospitals who are interested in treatment of diarrhoea.

2. Other senior medical staff from national or provincial hospitals where diarrhoea cases of any age are treated.

3. Senior nurses and other medical and nursing staff from national or provincial hospitals where diarrhoea cases of any age are treated.

4. Teaching staff of medical schools, and schools of nursing or of other health workers.

5. House staff (e.g., interns and residents) and medical and nursing students from an associated medical training facility which treats patients, such as a university teaching hospital.

6. In addition, the unit may train similar staff of neighboring countries.

Senior staff who are considering establishing a diarrhoea training unit in their hospital may come to learn how to set one up.

A diarrhoea training unit may also provide one day of practical training to participants in WHO Supervisory Skills courses.

Chapter 1: PURPOSES OF A DIARRHOEA TRAINING UNIT

TO TRAIN PHYSICIANS AND OTHER HEALTH WORKERS TO TREAT CASES OF DIARRHOEA PROPERLY

This purpose is accomplished by having participants observe proper case management and gain first hand experience treating patients. Participants also obtain relevant technical information through lectures, case presentations and discussions with experienced staff and other participants, and review of reference articles.

TO PREPARE PARTICIPANTS TO IMPROVE CASE MANAGEMENT IN THEIR OWN HOSPITALS OR PRIVATE PRACTICES

This purpose is just as important as the first, but is easy to overlook.

Participants may know how to treat cases properly at the diarrhoea training unit, but may not be able to use these procedures when they return to their own hospital. Unless there is support for the procedures, participants will find it too difficult or even impossible to use them. Support is needed in terms of attitudes of senior administrators, policies, physical facilities, supplies, and skilled staff.

Participants will need to convince others that a different way of treating diarrhoea will be better. They will need to be able to describe the facilities, arrangement and supplies needed. They may need to try to change certain policies. And they will need to train others to treat cases properly.

The diarrhoea training unit helps participants prepare for this challenge. It is a model for the physical arrangements and operating procedures of a health facility that treats diarrhoea cases properly. During the training participants identify changes that will need to be made at their hospitals so that the procedures they are learning can be applied. Advice from instructors and the exchange of ideas among participants helps each participant plan how specific changes can be accomplished.

TO PREPARE PARTICIPANTS TO ESTABLISH A DIARRHOEA TRAINING UNIT

Some participants who come to the diarrhoea training unit will come to learn how to establish one in their own hospital.

It is very impressive to see participants working alongside the staff, treating patients and getting the experience they need without disrupting the facility. An individual who has participated in training at a well-run diarrhoea training unit will remember the different activities that were effective and will have a clear understanding of what a diarrhoea training unit should accomplish.

By observing carefully how the diarrhoea training unit is set up, and how the training is conducted, participants get specific ideas for their training units. When trying to solve problems in preparing or conducting the training, they can think back to operational arrangements and training procedures that worked well.

These participants are given this guide and other materials to help them. In addition, the director of the diarrhoea training unit meets with them to discuss their questions and give practical advice.

Chapter 2: DESCRIPTION OF A DIARRHOEA TRAINING UNIT

Each diarrhoea training unit will be arranged and will operate somewhat differently from others, but certain characteristics are essential for any diarrhoea training unit.

1. Proper therapy for diarrhoea is practiced on a routine basis, so participants can see the therapy and be a part of it.

   a) Mothers stay with their children to give ORT and continue breastfeeding.

   b) Mothers are taught how to give ORT, continue ORT at home, recognize three or more signs of dehydration, and feed during and after diarrhoea. They are given other relevant health education messages on prevention of diarrhoea.

   c) ORT is used appropriately; IV therapy is not used when ORT would be effective.

   d) Antibiotics are used only as needed; antidiarrhoeal drugs are never used.

2. There are adequate numbers of child diarrhoea cases coming to the unit for treatment so that each participant may treat several patients during the training. (See page 19.)

3. Physicians, nurses and other staff members have compatible ideas on diarrhoea treatment and work together well.

4. Space is arranged so that there are 3 areas for management of diarrhoea cases. These areas may or may not be next to one another. The diarrhoea ward is often part of a general ward.

Reception and Triage Area, where:

* Cases are assessed and classified for treatment,

* Mothers of cases without signs of dehydration are educated on management of diarrhoea at home and prevention of diarrhoea. They practice mixing and administering ORS. They learn to recognize 3 or more signs of dehydration and to return if they appear.

ORT Area, where:

* Benches with side tables (or other seats like chairs or mats) are provided, with space for movement of physicians, other staff, participants and mothers,

* Cases are given ORS by their mothers or relatives, with supervision,

* There is adequate ventilation (e.g., fans) and access to toilet and washing facilities,

* ORS is mixed from packets or in bulk volumes (or this might be done in the pharmacy).

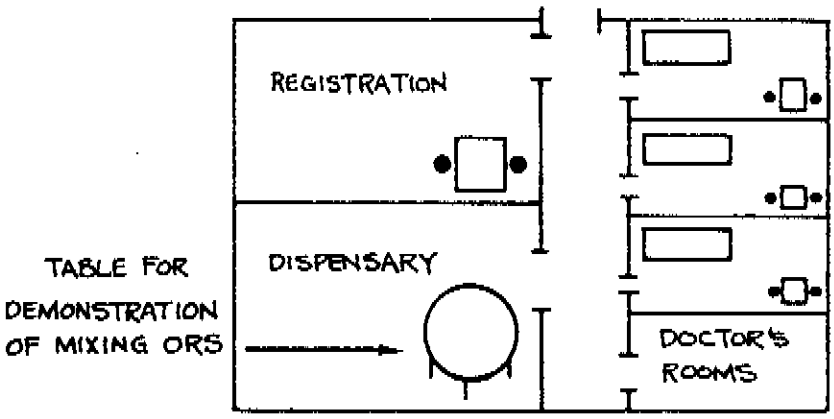
Diarrhoea Ward, where:

* Cases of severe dehydration and diarrhoea cases with complications are partitioned off from cases of other illnesses,

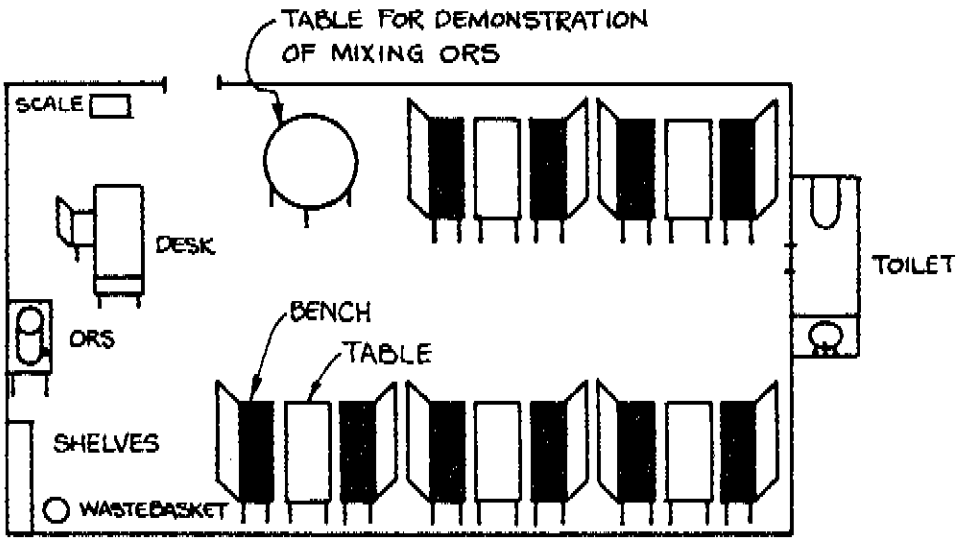
* Cases receive treatment with IV or nasogastric fluid initially, begin ORS as soon as appropriate, receive other necessary therapy,

* The mother or other relative can stay next to the patient's bed.

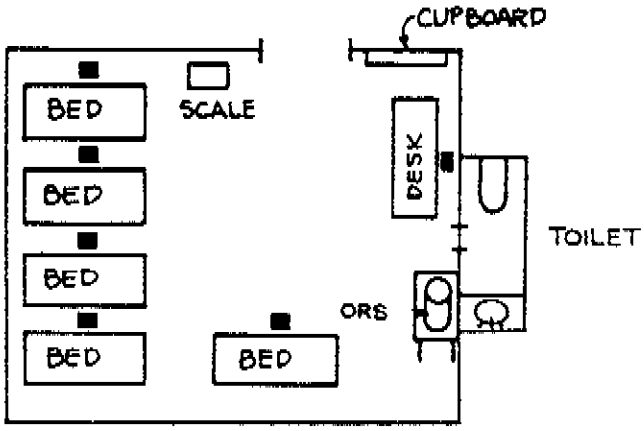
EXAMPLE



RECEPTION AND TRIAGE AREA



ORT AREA



DIARRHOEA WARD

5. The diarrhoea treatment areas of the unit are reasonably characteristic of the hospital settings where participants will work, in terms of the physical characteristics, staffing, range of patient care needs, and equipment.

   This is important so that participants get the impression that the procedures they learn will be possible to do in their own facilities.

6. Physicians, nurses and other staff members have compatible ideas on diarrhoea treatment and work together well.

7. At night, continued care is provided for inpatients and new emergency cases. A staff member with experience in ORT is on call at all times.

8. Appropriate supplies are available in adequate quantities. (A list of supplies needed in each of the three treatment areas is in Annex A.) The supplies should be taken out of the storage area and arranged each morning so that they will be convenient to use.

9. The unit has access to a conference/lecture room nearby which can comfortably seat all the participants and instructors.

10. A director for the diarrhoea training unit is appointed and supported by the hospital administration. This director should be:

    a) A physician with at least one year of experience in clinical management of acute diarrhoea, using ORT.

    b) Assigned responsibility for the training program.

    c) Given authority to obtain the necessary staff and resources to conduct training successfully.

    d) Trained to run the unit and conduct training using the WHO materials.

    e) Able to devote the time necessary to do it well.

Chapter 3: TRAINING OBJECTIVES

Exactly what the training includes, how it is done, and how long it takes will differ from one diarrhoea training unit to another. These things will depend on the number and type of participants and the resources and capabilities of the diarrhoea training unit. However, the training should always accomplish the 3 basic purposes of a diarrhoea training unit:

* To train physicians and other health workers to treat cases of diarrhoea properly.
* To prepare participants to improve case management in their own hospitals or private practices.
* To prepare selected participants to establish a diarrhoea training unit.

This chapter provides objectives for training at a diarrhoea training unit that will accomplish these purposes.

WHAT ARE CHARACTERISTICS OF GOOD TRAINING?

Good training teaches needed skills and knowledge in a positive and supportive way. Specifically, it is:

Performance based

Skills and knowledge that will help participants to perform their jobs better are the focus of the training. Instructors relate what they are teaching to the work the participants will be doing.

Active

Participants have an active role in the learning, so that they understand and remember more than if they just listen or read. They ask and answer questions, have

discussions, write plans, explain something, give a demonstration, and do role plays. As much as possible, they practice the new skills in a situation that is similar to their work situation.

Individualized

Each participant is able to ask questions and get explanations, demonstrations and coaching to the extent needed to learn the skill. The training schedule and methods are flexible to allow for differences in the ways participants learn.

Well organized

Careful planning and administrative support enable the training to be done smoothly. Participants and instructors know what to do when and have the space and supplies needed. There are few administrative problems to cause delay and little confusion to distract participants.

Positive

Instructors demonstrate pride, confidence, and commitment to what they are teaching. They show that they care whether the participants learn.

Training Objectives for Increased Understanding of Diarrhoea and Case Management

At the diarrhoea training unit, each participant will learn information to increase his or her understanding of diarrhoea, its management, and related issues. This knowledge will be gained through different methods such as lecture, first hand experience, talking with staff, and review of reference articles. On completion of the training, participants will be able to answer basic questions about the following topics:

Principles of Clinical Management of Acute Diarrhoeas

- Signs and symptoms of dehydration
- How ORT works
- Formulation of ORS
- Impact of ORT in the hospital and community
- Preparation and storage of ORS
- Advantages and limitations of ORT
- Use of nasogastric and intravenous rehydration
- Home fluids and early rehydration
- Super ORS
- Feeding during and after diarrhoea
- Use of other drugs

Case Management

- History taking
- Physical examination
- Decision on type of treatment
- Maintenance therapy
- Feeding during and after diarrhoea
- Associated problems and complications

Pathogenesis of Acute Diarrhoeas

- Definition of acute, persistent and recurrent diarrhoea
- Mechanism of fluid and electrolyte losses
- Toxin-mediated vs. invasive diarrhoeas
- Cause and significance of lactase deficiency
- Relationship of diarrhoea and malnutrition

Epidemiology of Acute Diarrhoeas

- Extent and importance of the problem of diarrhoeal diseases
- Etiology of diarrhoea
- Transmission of different agents

Prevention of Diarrhoea

- Breastfeeding
- Weaning practices
- Food and personal hygiene
- Maintenance and use of safe water supply and sanitation facilities
- Immunization
- Other potential strategies

National Programme for Diarrhoeal Diseases Control

Training Objectives for Development of Skills in Case Management

At the diarrhoea training unit, each participant will develop the following skills by practicing them under the supervision of instructors and staff.

IN THE RECEPTION AND TRIAGE AREA

1. Assess diarrhoea cases to:

   * Identify other diseases (e.g., meningitis) that may require treatment elsewhere,
   * Determine extent of dehydration and
   * Identify associated diseases (e.g., measles, severe malnutrition) or complications (e.g., paralytic ileus).

2. Decide which cases need to be sent to the ORT area or diarrhoea ward for treatment.

3. Teach mothers the danger of diarrhoea and signs of dehydration to watch for.

4. Teach mothers management of diarrhoea at home (fluids and food).

   Note: If it is the policy to give ORS packets to mothers of children who do not have signs of dehydration, participants should demonstrate and teach mothers how to mix and administer ORS.

5. Educate mothers in prevention of diarrhoea.

6. Prescribe other medicines if needed.

IN THE ORT AREA

1. Assess and treat cases:

   a) Take history,
   b) Examine patient and determine amount of fluid to be given in 4-6 hours,
   c) Discuss findings and recommendations for treatment with staff,
   d) Begin administering ORS and teach mother to administer the ORS,
   e) Assess patient's progress periodically and record findings (every 2 hours until patient is rehydrated; every 6 hours thereafter),
   f) Determine amount of ORS to be given for maintenance and advise the mother.

2. Mix oral solution in bulk volumes. (If this is done in the pharmacy, participants should assist in doing it there.)

3. Deal with difficulties administering ORS (such as vomiting).

4. Supervise mothers and nurses giving ORS.

5. Determine success or failure of ORS.

6. Encourage the mother to begin feeding the child according to guidelines established by the facility, which should provide food to the child and guardian if necessary.

7. Before a mother leaves, teach her how to continue caring for her child at home and the signs of dehydration to watch for. Tell the mother that if her child's dehydration recurs, she should return to the facility. Also explain what she can do to prevent diarrhoea and how to treat it when it occurs.

IN THE DIARRHOEA WARD

1. Assess patients with severe dehydration:

   a) Take history and read any case notes,
   b) Examine case,
   c) Determine amount of fluid required,
   d) If patient can drink, begin ORS while waiting for IV,
   e) Discuss findings and recommendations for treatment with staff.

2. Treat as appropriate:

   a) Administer intravenous therapy,
   b) Insert nasogastric tube and administer oral solution,
   c) Administer antibiotics as appropriate (e.g., for dysentery).

3. Assess patient's progress periodically and record findings (every 2 hours until patient is rehydrated; every 6 hours thereafter). Discontinue IV and begin ORT as soon as appropriate.

4. Care for associated diseases and complications.

5. Before the child is discharged from the diarrhoea ward, be sure that the mother is taught how to continue caring for her child at home and the signs of dehydration to watch for. Tell the mother that if her child's dehydration recurs, she should return to the facility. Also explain what she can do to prevent diarrhoea and how to treat it when it occurs.

Training Objectives for Improving Current Practice

At the diarrhoea training unit, participants will perform the following tasks to prepare to make improvements needed. They will write an action plan so that cases will be managed properly at their own hospitals or private practices.

1. Observe how the facility is set up to manage diarrhoea cases in three treatment areas. Notice the activities of staff and mothers, the supplies and the records.

2. Think of your own hospital's policies, treatment procedures, equipment, staff and arrangement. Compare it to the diarrhoea training unit. List actions or changes needed at your own hospital for proper case management.

3. Prepare a list of questions that might be asked by your senior colleagues when you propose changing current practice. Prepare answers to the questions.

4. List training, additional resources (such as equipment, space, staff), changes in policy, changes in attitude, etc., that will enable those improvements to be made.

5. Sketch a floor plan of the areas in your hospital where diarrhoea cases will be treated, as they are now or the way you will rearrange them.

6. List the steps that must be done to make the needed improvements, and how you will do those things, such as how you will:

    * Convince colleagues and staff of the effectiveness of ORT

    * Demonstrate that ORT does not have to take too much staff time

    * Obtain the necessary supplies

    * Train other physicians in ORT techniques

    * Train nurses and other staff to give ORT

    * Rearrange facility

    * Overcome pressure from staff and patients to use IV therapy and unnecessary drugs

    * Revise the policy that prohibits mothers in the diarrhoea ward so they will be allowed to stay with their children

Training Objectives for Establishing a Diarrhoea Training Unit

Some of the participants will want to learn how to establish a diarrhoea training unit. These participants will want to accomplish the objectives below, in addition to the objectives already listed.

Notice that these objectives are for participants who want to establish not just a diarrhoea treatment unit in their hospitals, but a diarrhoea training unit to train participants from other hospitals.

1. Discuss prerequisites for establishing a diarrhoea training unit with the director of this diarrhoea training unit.

2. Obtain a copy of the Diarrhoea Training Unit Director's Guide and other materials that were used to plan this training or were used during the training. Review the director's guide.

3. Observe the physical arrangements for the training.

4. Observe the activities of the participants, instructors, staff, and the training director during the training and assess how the objectives are accomplished.

5. Outline and discuss your plans for establishing a diarrhoea training unit with the training director. Learn what support is available from the ministry of health or from WHO and how to obtain it.

6. Begin planning for training courses that you will conduct. For example, plan the type and number of participants that can be trained, staff needed, training objectives and activities.

Chapter 4: STEPS TO PREPARE FOR THE TRAINING

Careful planning is essential for the training to be successful. Preparations will include both technical and administrative work. The director of the diarrhoea training unit should perform or assign responsibility to someone who will perform each of the steps below. Suggestions for each step are provided in this chapter.

Notice that some of the steps, such as steps 3 and 4, will be time-consuming only the first time this training is planned. When training is conducted subsequently, the same procedures and materials will be used again, with only minor adjustments if necessary.

1. Determine the number of participants that can be trained.
2. Make sure adequate funds are available for all expenditures.
3. Plan the training design (that is, the training methods and activities).
4. Plan how participants' progress will be monitored.
5. Select instructors.
6. Select dates for training and write the agenda.
7. Prepare and distribute a course description.
8. Check supplies and order any additions needed.
9. Obtain copies of training materials and references in the appropriate languages, if possible.
10. Arrange for lodging, meals, and transportation.
11. Prepare instructors and other staff.

STEP 1 - DETERMINE THE NUMBER OF PARTICIPANTS THAT CAN BE TRAINED

The diarrhoea training unit must receive adequate numbers of child diarrhoea cases of different degrees of severity. This is essential so that each participant can observe a range of types of cases and treat several cases.

At a minimum, each participant should treat three dehydrated patients during the training. These patients should present with signs of dehydration and be treated in the ORT area or diarrhoea ward during working hours.

Training courses should not be organized at a time or place that this cannot be assured. It is highly recommended that each participant treat more than three patients to gain as much experience with ORT as possible.

The number of participants that can be trained is determined by the number of cases expected at the facility. Therefore, the number of participants that can be trained will be greater during the high season for diarrhoea.

HOW MANY PARTICIPANTS CAN BE TRAINED?

Average Number of Dehydrated Patients During Working Hours in a 5 Day Period	Maximum Number of Participants That Can Be Trained	Instructors Needed For The Training[1]	Nurses Needed (for a 24 hour period)[2]
6 or less	1 - 2	1 - 2	3
12	4		
18	6	3	
30	10		
45 or more	15		6

1 This number of instructors should be available during all hours that participant work is scheduled. Lecturers or other instructors who have brief contact with participants are additional.

2 This number of nurses is needed to care for patients and assist participants in the ORT area and the diarrhoea ward.

STEP 2 - MAKE SURE ADEQUATE FUNDS ARE AVAILABLE FOR ALL EXPENDITURES

Expenditures may include support for participants' travel and per diem, extra supplies, training and reference materials, special compensation for instructors, coffee and tea breaks, and other miscellaneous items.

STEP 3 - PLAN THE TRAINING DESIGN

The training design is the plan of activities for the training. It is based on the training objectives. It outlines the activity, the training method, who does what, materials needed, and the time allotted.

On the next page is part of a sample training design. A blank training design form is in Annex B.

The steps to develop a training design are given below. Though it is time-consuming to develop a complete training design, it only needs to be done once. The design will be followed again each time the training is given, and so it is worthwhile to develop a very good one.

1. Review the specific training objectives (pp. 13-17) and plan how to address them in the training. If the training will not be able to address them all, select the most important ones.

2. Begin with the first objective or group of objectives and think of what participants could do to learn those skills. Write this in the activity column.

   Some examples of activities are: mix ORS; teach a mother about home treatment; identify specific changes needed in the facility; present case studies; insert a nasogastric tube; treat complications; explain reasons that ORS is superior for treatment of dehydration.

3. For each activity, specify the method that will be used to accomplish it in the next column. Tell who will do what. Some examples of methods are:

   Demonstration
   Doing the task under supervision
   Role play
   Written or verbal question-and-answer sessions
   Case studies
   Lectures
   Small group discussion
   Group problem solving sessions
   Written exercises
   Review of reference articles

Training Design Form

ACTIVITY	METHOD	RESOURCES	TIME
Objectives: Changing Current Practice Introduction: - Why applying procedures is important - Training objectives - Recognition of difficulties in making a change	Instructor reviews each objective and schedule of activities, answers questions about what participants will do. Instructor asks participants to tell any experiences they have had trying to make a change. Lists types of resistance and difficulties mentioned on chalkboard. Instructor asks participants to list benefits that will result if ORT is initiated. Writes benefits on chalkboard. In closing, says it will be difficult to make changes but it can be done. Participants will discuss ways to overcome resistance later in the course.	Copies of training objectives Meeting room with chairs Chalkboard or flipchart	1 - 1½ hr
Observe how the facility is set up and functions.	Participants observe treatment areas while they work.	List of items to specifically notice in each area, such as supplies, records, space arrangement.	½ - 1 day, while managing cases
Compare own hospital with the diarrhoea training unit.	Participants individually write lists of changes need in own facilities	Quiet space for participants to sit and work	2 hours for individual work

There may be several methods for accomplishing some activities. This can be very beneficial. When skills are used and reinforced repeatedly, participants will become more competent and confident doing them. When participants are given the same information from different sources in different ways, they will be more likely to understand, absorb and remember it.

For example, a participant should learn the five most useful signs of moderate and of severe dehydration in infants. Imagine how well participants would know the signs if they read about them in an article, heard other participants' discussion of them in their case studies, and looked for them in each of the patients they treated during the training. With each repetition, the recall of the signs would be quicker and easier.

On the chart under "Method," write what will be done and who will be involved. Write enough words to clearly describe how the method will work. For example, "Instructor distributes and reviews assessment chart; participant assesses a case and tells his findings; instructor and other participants discuss them."

4. List the resources that will be needed to carry out the training activity.

   Resources could include materials for training, supplies for case management, or space of a certain type. When the number of participants is known, write in the number of copies of written materials and the quantities of other materials needed.

   Some examples: Assessment chart, reference articles, chalkboard with chalk or large easel with paper and felt tip markers, supplies for administering ORT, room with chairs and tables, ORT films, a projector, blank case history forms.

5. Estimate the time required to do the activity.

   Write the amount of time (for example, 10 minutes, or 2 hours) in the appropriate column.

6. Repeat steps 2 through 5 for each activity. Refer to the specific training objectives on pages 13-17 and continue the list of activities until all the objectives have been addressed.

7. Rearrange the entries in the training design so that they are in the order that they should occur during the training.

   Add an introductory and a closing session for the training course. Where needed, add an activity to introduce a new subject or group

of activities, such as, "Explanation of next group of activities: planning how to improve case management in your own hospital."

Some activities probably can be grouped together. Revise the time estimates for activities that are combined.

Sequence the training to keep participants interested. For example, avoid having only lectures all day. Schedule them between more stimulating methods such as working with patients or small group discussions.

8. Determine the length of the training course.

Total the times listed for the activities. Also add some time for opening and closing sessions and lunch and tea breaks. Divide the activities among the number of days available. It may be necessary to revise some of the times, or to add or omit activities.

If the amount of time needed is very different from the number of days tentatively planned for the training, carefully examine whether the number of days or the training design should be changed. Be sure that the training objectives will be achieved.

> Be sure that participants will spend at least half of the time doing practical work, that is, observing, discussing or practicing proper diarrhoea treatment procedures.

Some suggestions for the training design

Below are some suggestions that could be used in a training design. This is not a complete design, but provides a few ideas.

For skill development in case management:

* Assemble the group at the triage area. (Assign pairs of participants to work together if there will not be many diarrhoea cases to treat.) An instructor assesses the first child presenting with diarrhoea, describing each sign of dehydration as it is assessed.

Ask a participant to do the assessment of the next child that comes in with diarrhoea. If that child needs to be treated in the ORT area or the diarrhoea ward, that participant accompanies the patient and administers the appropriate treatment (under the supervision of the instructor assigned to that area). If the child does not need to remain at the facility for treatment, the participant teaches the mother how she should care for the child and teaches her the other relevant health education messages.

As more patients arrive, other participants assess and treat them. When a child's treatment has been started and the child's condition is stable (for example, after 2-4 hours), each participant returns to the triage area to be assigned another patient.

Participants are made to feel that they are responsible for their own cases. They report to the staff in case of difficulty. Participants also move around to observe other cases and be exposed to more situations and procedures. Staff are encouraged to talk about their experience with difficult cases and unusual problems, particularly problems not seen in cases at that time.

The instructor in the triage area makes sure that each participant has an opportunity to treat a variety of cases during the training. Throughout the practical work, participants learn by observing other participants and staff and by discussing the cases among themselves and with the instructors.

* Participants write a case history and progress report on each patient cared for. They record this information on a form provided for this purpose. (A sample form is in Annex C.)

  Schedule several sessions for participants to present case studies to the group. Every participant should present one or more case studies during the training. Each case presentation should include a discussion of why the treatment was appropriate and other relevant issues.

For increased understanding of diarrhoea case management:

* Encourage questions and discussion during or following the lectures. During practical work, instructors discuss with participants points from the lectures and the references. Instructors ask questions about the cases being treated that remind participants of the benefits and principles of ORT.

For improving current practices:

* Participants assess their own facilities and write a list of improvements needed if proper diarrhoea treatment practices are to be practiced. They sketch a floor plan of the areas where diarrhoea cases will be treated.

  Each participant writes a list of what must be done to enable the changes on the first list to be made (such as convince the chief of staff that the new procedures are better and are feasible, or obtain adequate supplies of ORS).

  Small groups meet to make suggestions on how certain changes can be accomplished. For example, the group might plan to convince the chief of staff by doing a demonstration of the efficacy of ORT, and providing credible reference materials on the time and cost savings in a hospital when ORT is used. The plans should include specifically how the demonstration can be planned and carried out and what reference materials will be most relevant and convincing. Participants and instructors could role play a discussion to convince a colleague to try ORT.

For establishing a diarrhoea training unit:

* Give participants a copy of this guide to read during the course. They observe the activities of the other participants, instructors and staff. In a discussion they review the training objectives and the activities related to each objective. Participants then discuss whether they will do the training in the same or a different way and why. The training director discusses his or her experience planning and conducting this training.

  Participants begin outlining a plan for the training courses they will conduct. Specifically, they do (or begin) several of the steps described in Chapter 4, such as,

  Step 1. Determine the number of participants that can be trained
  Step 3. Plan the training design
  Step 4. Plan how participants' progress will be monitored

  An instructor or the training director reviews and discusses each participant's plans and offers suggestions.

STEP 4 - PLAN HOW PARTICIPANTS' PROGRESS WILL BE MONITORED

There is a need to monitor each participant to know what the participant has accomplished already and what remains. Then attention can be given to the participant as needed for him or her to complete the training successfully.

A list, or checklist, of what the participants should do is the basic tool for monitoring. Keeping track of what each participant does and comparing it to the list makes it clear what remains to be accomplished. The checklist might be the training objectives. Alternatively, it could be a more detailed list of activities taken from the training design.

Two ways to use the checklist to monitor are described below. One or both may be used.

Self-monitoring

Each participant has a list of the activities that he or she should accomplish during the training. Each day the participant checks off the activities accomplished that day. Periodically, the participant discusses his or her progress with an instructor and may bring to the instructor's attention any particular needs. (For example, the participant may not have had a chance to treat a severely dehydrated patient).

Instructor monitoring

Each instructor is assigned certain participants to monitor. When a participant accomplishes an activity, the instructor marks it off on the checklist. The instructor learns about each participant's work by observation and talking to the participant and other instructors as needed.

Though this may be done informally, it is very important. Instructors must know what skills each participant has learned in order to know what remains to be taught. If a participant is having difficulties, the instructor will discuss these with the training director and plan what to do.

An example of an instructor checklist is on page 27. With minor modification (e.g., substitute "case number" for "participant's name" and omit instructions at bottom of form) this can be used for self-monitoring.

The training director is responsible for making sure that each participant has the opportunity to participate and achieve all the

INSTRUCTOR'S EVALUATION OF CLINICAL SKILLS

(To be submitted to Course Director)

Location of Course _____ Instructor _____ Date of Course _____

Participant's Name	CLINICAL SKILLS													A Plan for Improving Diarrhoea Treatment Practices at the Participant's Own Facility Was: Written (W) Written and discussed (WD) Only Discussed (D) Not Addressed (NA)
	Assess dehydration	Select treatment	Teach mother to care for child at home	Educate mother in diarrhoea prevention	Determine amount of oral fluid for first 4-6 hours	Administer ORS	Teach mother to administer ORS	Deal with difficulties in administering ORT	Prescribe maintenance therapy with ORS and advise mother	Determine amount of IV fluid for first 4-6 hours (severe dehydration)	Assess progress and switch from IV to ORT when appropriate	Treat patients with complications	Use or observe use of nasogastric tube	
1														
2														
3														
4														
5														
6														
7														
8														

Record highest level of skill exhibited by participant: 1--Performed correctly, confidently, without assistance
2--Performed correctly with assistance; or correctly but very unsure of self 3--Performed not entirely correctly
4--Did not perform the skill

training objectives. It will be of benefit, therefore, to have the instructors inform the director of the progress of the participants every day, so that adjustments can be made if needed. (For example, if time is running out and participants have not presented enough case studies, an evening session could be scheduled.)

STEP 5 - SELECT INSTRUCTORS

The instructors will be responsible for assigning participants to cases and supervising them as they treat the cases. (Staff who normally treat cases will also be there to assist participants, answer their questions and keep the usual patient records.) The instructors will also lead group discussions, case presentations, and other activities planned by the training director.

The physicians and nurses who will be instructors should:

* Be trained to use ORS and have experience treating over 100 dehydrated cases (including 25 with complications) using ORT.

* Be given adequate time to do the training.

* Want to be instructors. (There is low turnover; instructors will not quickly move out of teaching.)

* Be committed to use of ORT and proud that they use it.

* Be available during normal outpatient department hours.

* Have skills in training, such as:

  - Getting the participants' attention and keeping them alert,

  - Checking often for understanding and skill development, and providing appropriate information or feedback to increase learning,

  - Encouraging participation and questions,

  - Providing correct and concise answers to questions, or guiding participants to reach answers themselves,

  - Using words that participants understand, a clear and audible voice, and training aids that help, not distract.

Looking at the training design, determine the instructors that will be needed. Think about how many participants there will be and what the instructors will need to do.

Notice the specific skills and topics that small group discussions, lectures, role plays and other activities outside the ward are designed to teach. Select an instructor for each of these sessions who will teach the specific skill or topic well.

Be sure there will be enough instructors and experienced staff members for each participant to receive individual attention.

STEP 6 - SELECT DATES FOR TRAINING AND WRITE THE AGENDA

Select precise dates for the training that will be most convenient for the instructors, the participants, and the facility. Also consider schedules of the transportation that participants will use to come to the facility and availability of accommodations on those dates.

Write an agenda for the training that specifies the dates and major activities that will occur. This should be easy to write by referring to the training design. The agenda will be helpful to show instructors, staff, potential participants and other people who are interested in what is planned.

A sample agenda is in Annex D.

STEP 7 - PREPARE AND DISTRIBUTE A COURSE DESCRIPTION

Participants who are committed to learning and using the diarrhoea treatment procedures will make the training a success.

You can take certain actions to help assure that appropriate and motivated participants will come to the training. Create the proper expectations by clearly describing what the training will accomplish and whom it is for. Contact hospital directors or other groups that will send participants to the training and send them the course description. Ask them to select the best participants. They should give a copy of the course description to the potential participants so that each participant will realize what will be expected.

Prepare a course description that covers the following points:

* Benefit to the participant -- skills the participant will learn

* What type of participant should come and why -- responsibilities and characteristics of people who can apply the skills in their work

* Purpose -- why the training is being offered

* Involvement -- that participants will work in the hospital with patients and their families

* Schedule -- dates and times that participants are expected to be at the diarrhoea training unit and the location

* Administrative information -- any additional information about accommodations, transportation and per diem

* Response -- how to register and the deadline for registering

STEP 8 - CHECK SUPPLIES AND ORDER ANY ADDITIONS NEEDED

Review the lists of supplies in Annex A and take inventory of the supplies on hand. Will these be sufficient considering the normal case load, plus the expected number of participants?

Review the training design to see if any materials need to be prepared. An example might be forms for participants to complete on each of their assigned patients. Design these if they are not available and make sufficient copies.

STEP 9 - OBTAIN COPIES OF TRAINING MATERIALS AND REFERENCES IN THE APPROPRIATE LANGUAGES IF POSSIBLE

Obtain enough copies of the references for <u>every</u> participant to have a set. This is important so that each participant will have access to the information during the training. But it is even more important to provide the materials as a way to support the participants when they return to their hospitals.

Participants will use the references for information on specific treatment procedures or unusual situations. References will help to answer questions from others about treatment procedures and the rationale for them. The references will give credibility to the new ideas and will help to convince other physicians and staff. Participants will also use the references when training others.

A list of references is in Annex E. You should add references of national or regional importance.

STEP 10 - ARRANGE FOR LODGING, MEALS, AND TRANSPORTATION

The diarrhoea training unit or the ministry of health might make these arrangements. If participants are asked to make their own arrangements, recommendations from the diarrhoea training unit will help them.

Some considerations for making these arrangements are listed below.

* Sleeping accommodations for participants should be near the diarrhoea training unit so that a lot of time will not be spent traveling back and forth each day. It is ideal if participants can return to the ward during the evening to check on the progress of their patients.

* Eating facilities should be convenient to the diarrhoea training unit and to the sleeping accommodations.

* Transportation for participants between the diarrhoea training unit and where they eat and sleep should be reliable. It also should be free for participants or very inexpensive.

STEP 11 - PREPARE INSTRUCTORS AND OTHER STAFF

Instructors

Conduct a meeting to prepare the instructors for the training. Give them copies of the specific objectives and, if possible, the training design. Review the training design and assign each individual to certain sessions. If each instructor will not receive a copy of the complete training design, give each one a written description of the activities he or she will lead or participate in.

Staff

Be sure that the staff members who will be working closely with the participants:

* Are present during each shift, each day of the course, in adequate numbers.

* Are trained to give proper ORT and teach mothers.

* Perform case management tasks correctly.

* Keep adequate records to document a patient's progress (that is, adequate for participants to learn a patient's response to therapy during time participants are not there).

* Are friendly and supportive of participants, so that they will help the participants as needed, correct mistakes diplomatically, and discuss their experiences treating difficult or unusual cases.

Conduct a meeting to prepare the staff for the training. They must be informed of what the participants will be doing in the facility and asked to help and guide the participants. Give them an opportunity to ask questions about how the training will work and what they should do. Answer these questions carefully. The staff will have a critical teaching role.

Chapter 5: CONDUCTING THE TRAINING

With a thoughtful training design and well prepared instructors and staff, the director's role will be to keep the training on track.

Give the opening welcome and briefing for participants

Describe the objectives of the training and the planned activities.

Challenge participants to participate and learn as much as possible.

Introduce the instructors.

Discuss administrative details.

Monitor the overall progress

Check whether things are going according to plan. If there is a need, modify the plan and communicate the changes to all involved.

Make sure that the staff and instructors have what they need to do their jobs.

Monitor the progress of participants

Assign each instructor some participants to monitor.

Follow the plans developed for monitoring progress using the checklist of activities or objectives (Step 4 - Plan how participants' progress will be monitored, page 26).

Meet with the instructors regularly to get information on the participants' progress and plan solutions for any problems.

Monitor instructors and staff

Observe small group discussions and practical work, as well as the lectures, to learn what instructors are doing. Give feedback on what is being done. (For example, instructors may follow the training design, or they may get off track.) Also monitor how the teaching is being done. (For example, staff may give helpful advice to participants on their cases, or staff may respond to questions impatiently.) Feedback discussions with the instructors may also suggest ways to improve training in the future.

Chapter 6: EVALUATION

Evaluation conducted at the end of the course will assess what participants have accomplished at the course. Evaluations conducted weeks or months after the training assess what they have done on the job using what they learned. Some evaluation methods are described below.

First decide what needs to be learned from an evaluation, how the results will be used, and who will analyze the data. Then select one or more evaluation methods that will provide the information needed. There is no point in conducting evaluations if the results will not be used.

END OF COURSE EVALUATION METHODS:

Activity Checklists - If these checklists are kept on each participant and are accurate, they are an excellent way to evaluate the course. Analysis can be done of the number of participants that successfully accomplished all or certain activities (such as the case management activities).

If many participants were not able to accomplish a certain activity, the evaluation should try to determine why. Perhaps in subsequent courses, participants should be given more assistance, or the activity should be changed.

Pre- and Post-Tests - These tests can assess whether participants learn certain pieces of information during the training. (The pre-test is helpful to alert participants to what they will be expected to learn.)

End of Course Questionnaire - Questionnaires only provide information on perceptions and feelings that participants are willing to write down. If the questions are selected and worded carefully, questionnaires may give the training director some useful suggestions for improving future courses.

ON THE JOB (FOLLOW UP) EVALUATION METHOD:

On-Site Observation - Making follow up visits to participants to observe and discuss what they have been able to accomplish since the training is time-consuming. However, it is the best way to determine what is actually being done in a hospital.

WHO is willing to support visits to evaluate whether participants in intercountry courses have been able to implement correct diarrhoea treatment procedures in their hospitals.

The national CDD Programme could conduct follow up visits to evaluate whether participants in national courses are managing diarrhoea cases properly since the training.

Chapter 7: SUPPORT PARTICIPANTS AFTER TRAINING

The diarrhoea training unit also should help participants after they complete the training. There should be specific ways that the unit supports participants' efforts to apply what they have learned.

Participants may need support when:

* They are uncertain about some of the procedures they have learned or encounter difficult cases,

* They teach others the new procedures and answer questions about them,

* They need to implement changes at their hospital so that the new techniques can be used.

A way to support participants would be to provide technical reference materials on diarrhoea management and updated information when it becomes available. Another may be to give participants a list of other physicians or facilities that are using the proper techniques so that they can locate supporters in their area. Another might be a visit to a participant or a request for someone representing the national CDD Programme to visit in order to help establish or improve a unit.

Whatever support is planned, explain to the participants what it is and how they can obtain it.

Support to Participants Who Will Establish a Diarrhoea Training Unit

Participants who encounter questions or difficulties when setting up a training unit should be encouraged to obtain advice by writing to WHO or visiting the director of the unit where they were trained.

Support to Intercountry Course Participants

Participants at intercountry courses can be placed on the mailing list of the WHO Programme for Control of Diarrhoeal Diseases. They will be sent the most recent publications on diarrhoea control as they become available.

ANNEXES

Supplies for the Diarrhoea Training Unit

Supplies for the Reception and Triage Area

White coats for all participants

Wall chart on assessment of dehydration

Health education leaflets, pamphlets and other materials for families on management of diarrhoea, including feeding

Posters on preparation of oral fluid, diarrhoea prevention, etc.

Forms for record keeping

ORS packets of the standard size in the area (for demonstrating to mothers)

Jars and flasks (commonly available sizes and one marked with volume measurements)

Glasses, cups and spoons

Supplies for the ORT Area

ORS packets for 5, 10, or 20 litres

5, 10, or 20 litre drum with cover and side tap

ORS packets of the standard size in the area (for demonstrating to mothers)

Jars and flasks (commonly available sizes and one marked with volume measurements)

Antibiotics (such as tetracycline capsules) and a suitable antibiotic for dysentery

Health education leaflets, pamphlets and other materials for families on management of diarrhoea, including feeding

Posters on preparation of oral fluid, diarrhoea prevention, etc.

Baby scales (accurate to 20 grams)

Thermometers

Glasses, cups and spoons

Forms for record keeping

Feeding bottles

Cotton

Gauze

Milk powder

Towels and other linens

Storage cabinet or shelves

Droppers

Syringes

Soap

Diapers

Waste basket/bucket

Wash basin and towel rack

Supplies for the Diarrhoea Ward

Beds or tables with wires above for hanging bottles of IV fluid

Lactated Ringer with giving sets

Scalp vein (butterfly) needles

Antibiotics, such as tetracycline capsules, and a suitable antibiotic for dysentery

Glucose for injection (20%) - 50ml ampules x 10

Baby scales (accurate to 20 grams)

Syringes and needles

Alcohol, cotton, gauze

Glasses, cups and spoons

One litre and 1/2 litre flasks

Towels and other linens

Diapers

Desk and chair for the nurse

Tray or cart for supplies

Waste basket/bucket

Bedside stools for attending mothers

All the supplies required for administering ORS

Health education materials for families and posters

Nasogastric tubes

Thermometer

Droppers

Empty bottles

Feeding bottles

Milk powder

Soap

Forms for record keeping

Cupboard

Supplies and Equipment for Training

35 mm slide projector and slide sets

Flip charts and felt pens

Photocopying machine and supplies

Automatic stencil cutting and duplicating machine with supplies

Overhead projector, transparent paper and felt pens

Film projector and training films

Other items needed to carry out the training design, such as case study forms

Paper and pens for participants

File of additional reference materials for participants to consult

Supplies and Equipment for the Pharmacy

For dry packing 5, 10 or 20 litre packets for hospital use:

Stock for 5000 litres

Sodium chloride	17,5 Kg
Trisodium citrate, dihydrate . . .	14,5 Kg
Potassium chloride	7,5 Kg
Glucose	100 Kg

Polyethylene packaging material and labels

Sealing apparatus

Training Design Form

TIME	RESOURCES	METHOD	ACTIVITY

EXAMPLE

Case Record Form

For Completion by Diarrhoea Training Unit Participant
in ORT Area or Diarrhoea Ward

Registration No._____ Admission date _____ Hour _____
Discharge date _____ Hour _____

Patient's Name:_____

Address: _____

Age:_____ years _____months Sex ___

Date and hour of onset of diarrhoea: _____

Number of stools last 24 hours: _____ Blood _____ Mucus_____

Number of occurrences of vomiting last 24 hours: _____

Type and volume of fluids drunk since onset: _____

_____

Dietary history: Exclusively breastfed _____ Partially breastfed _____
Other milk/formula only _____ Fully weaned _____

Type of food eaten since onset: _____

Medicines taken since onset: _____

AT TIME OF ADMISSION

Body weight: _____ Estimated fluid deficit: _____

Clinical diagnosis: _____

Degree of dehydration: _____

Amount of fluid to be given in first 4 hours: _____

Type of fluid: ___ORS or ___Ringers Lactate

Other medicines ordered (specify dosage): _____

CLINICAL STATUS	On Admission	Hours After Admission			
		At 2 Hours	At 4 Hours	At 6 Hours	At 24 Hours
General Appearance					
Thirst					
Radial Pulse					
Respiration					
Fontanelle					
Skin Elasticity					
Eyes					
Tears					
Mucous Membranes					
Urine Flow					
Blood Pressure					
Temperature					

CLINICAL STATUS	Hours After Admission			
	From 0 to 2 Hours	From 2 to 4 Hours	From 4 to 6 Hours	From 6 to 24 Hours
Number of stools				
Episodes of vomiting				
ORS consumed, volume				
Other fluids drunk, volume				
IV fluid given, volume				
Food eaten				
Medicines taken				

AT TIME OF DISCHARGE

Body weight: _____ Amount of fluid to be given in next 24 hours: _____

Other instructions given to mother: _____

_____

Clinical Training Course

PROTOTYPE AGENDA

Day 1

8:30 - 9:00	Registration
9:00 - 9:45	Official opening session
9:45 - 10:15	Coffee*
10:15 - 11:00	Briefing: Objectives of the training, planned activities, administrative announcements
11:00 - 12:00	Lecture 1: Principles of oral rehydration therapy
12:00 - 13:30	Lunch
13:30 - 15:00	Participant reports on past and current activities related to acute diarrhoea
15:00 - 16:30	Lecture 2: Clinical management of acute diarrhoea
16:30 - 17:00	Tour of the diarrhoea treatment unit (Optional)

Day 2

8:30 - 9:30	Lecture 3: Etiologic agents of diarrhoea
9:30 - 12:00	Practical work: case management
12:00 - 13:30	Lunch
13:30 - 15:30	Practical work
15:30 - 16:30	Lecture 4: Pathogenesis of acute diarrhoea

Day 3

8:30 - 9:30	Discussion: Improving current case management practices
9:30 - 12:00	Practical work**
12:00 - 13:30	Lunch
13:30 - 15:30	Practical work
15:30 - 17:00	Case presentations

* Coffee and tea breaks would be taken mid-morning and mid-afternoon.

** The most important scheduling consideration is that practical work begin when most patients present at the treatment unit. This agenda assumes that patients would not be available until 9:30. If patients are waiting or if cases come who will be good for demonstration, the practical work should be first; if necessary, the lectures should be rescheduled or interrupted. At times when participants are not actively involved in case management, they should remain near the treatment area, in case new patients arrive or an instructor wants to discuss a patient with the group. During this time participants can read reference materials and work on their plans for improving current practices.

Day 4

8:30 - 9:30	Lecture 5: Prevention of diarrhoea
9:30 - 12:00	Practical work
12:00 - 13:30	Lunch
13:30 - 14:00	Introduction to establishing a training unit (Optional*)
14:00 - 15:30	Practical work
15:30 - 17:00	Case presentations

Day 5

8:30 - 10:00	Small group discussions of changes needed to improve case management
10:00 - 12:00	Practical work
12:00 - 13:30	Lunch
13:30 - 15:00	Practical work
15:00 - 16:00	Case presentations
16:00 - 16:45	Lecture 6: National Programme for Diarrhoeal Diseases Control

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Day 6

8:30 - 10:00	Individual work: Planning how to make needed changes
10:00 - 12:00	Group discussion: How to make changes
12:00 - 13:30	Lunch
13:30 - 15:30	Individual work: Writing final plans
15:30 - 16:30	Closing session

Day 7* (Optional)

8:30 - 9:30	Discussion: Conducting clinical training
9:30 - 12:00	Individual work: Plans for the diarrhoea training unit
12:00 - 13:30	Lunch
13:30 - 15:00	Group discussion: Organizing clinical training

* The activities scheduled for Day 7 and the introductory session on Day 4 would be included only if participants will have substantial responsibility for clinical training.

Reference Materials

Reference Materials to be Provided to Every Participant

1. The management of diarrhoea and use of oral rehydration therapy--a joint WHO/UNICEF Statement. Geneva, WHO (1985).

2. A manual for the treatment of acute diarrhoeas, unpublished document WHO/CDD/SER.80.2 Rev.1 (1984).

3. Treatment and prevention of acute diarrhoea--guidelines for the trainers of health workers. Geneva, WHO (1985).

Reference Materials to be Made Available for Consultation by Participants

1. Pizarro, D. et al. (1983) Treatment of 242 neonates with dehydrating diarrhoea with an oral glucose-electrolyte solution. J. Pediatrics, 102: 153-156.

2. Clements, M.L. et al. (1980) Oral therapy with glucose electrolyte solution. Lancet, 2: 34.

3. Mahalanabis, D., M.H. Merson, & D. Barua. (1981) Oral rehydration therapy--recent advances. World Health Forum, 2: 245-249.

4. Oral rehydration therapy (ORT) for childhood diarrhea. Population Reports, Series L, No. 2 (revised 1984). Baltimore, Johns Hopkins University.

5. Mahalanabis, D., M.H. Merson. (1986) Development of an Improved Formulation of Oral Rehydration Salts (ORS) with Antidiarrhoeal and Nutritional Properties: A "Super ORS." In: Holmgren, J., Lindberg, A., and Mollby, R. (eds.) Development of Vaccines and Drugs Against Diarrhea, 11th Nobel Conference, Stockholm 1985. Lund, Sweden, Studentlitteratur, pp. 240-256.

6. Hirschhorn, N. (1980) The treatment of acute diarrhea in children. An historical and physiological perspective. Amer. J. Clin. Nutr., 33: 637-663.

7. Santosham, M. et al. (1982) Oral rehydration therapy of infantile diarrhea. A controlled study of well-nourished children hospitalized in the United States and Panama. New Engl. J. Med., 306: 1070-1076.

8. Oral Rehydration Therapy: An annotated bibliography. 2nd ed. Washington, PAHO/WHO Sci. Publ. No. 445 (1983).

9. Bibliography of acute diarrhoeal diseases, WHO unpublished document series WHO/CDD/BIB.

10. Feachem, R.G., Hogan, R.C. & Merson, M.H. (1983) Diarrhoeal diseases control: reviews of potential interventions. Bull Wld. Hlth. Org., 61: 637-640.

11. Snyder, J.D. & Merson, M.H. (1982) The magnitude of the global problem of acute diarrhoeal disease: a review of active surveillance data. Bull. Wld. Hlth. Org., 60: 605-613.

12. Guidelines for cholera control. WHO unpublished document WHO/CDD/SER/80.4 (1980).

13. Manual for laboratory investigations of acute enteric infections. WHO unpublished document CDD/83.3 (1983).

14. Diarrhoeal diseases. Children in the Tropics. N°185 (1985) Paris, International Children's Centre. Available in English and French.

15. National Research Council, Subcommittee on Nutrition and Diarrheal Diseases Control, Committee on International Nutrition Programs, Food and Nutrition Board. 1985. Nutritional Management of Acute Diarrhea in Infants and Children. Washington, D.C.: National Academy Press.

16. Drugs in the Management of Acute Diarrhoea in Infants and Young Children. WHO unpublished document CDD/CMT/86.1 (1986).

17. Molla, A., Molla, A.M., Sarker, S.A., Khatoon, M., Rahaman, M.M. Effects of Acute Diarrhea on Absorption of Macronutrients During Disease and After Recovery. In: Chen, L.C. and Scrimshaw, N.S. (eds.) Diarrhea and Malnutrition: Interactions, Mechanisms, and Interventions. New York: Plenum, 1983: 143-154.

18. Impact of Oral Rehydration Therapy on Hospital Admissions and Case Fatality Rates for Diarrhoeal Disease: Results from Twelve Hospitals in Various Countries. World Health Organization Weekly Epidemiological Record: 1984, 59, 361-363.

Teaching Aids

1. Focus on Diarrhoea, Audio-visual information package: Diarrhoea--a major public health problem (60 slides); Diarrhoea--approaches to control (57 slides). The Ross Institute, London School of Hygiene and Tropical Medicine for the Save the Children Fund (1984).

2. Acute diarrhoeal diseases as a problem and approaches for their prevention. WHO unpublished document CDD/83.4 (Slide set A: 43 slides) (1983).

3. Acute diarrhoeal diseases--Clinical features and management. WHO unpublished document CDD/82.2 (Slide set B: 36 slides) (1982).

4. Oral Rehydration for Childhood Diarrhoea. WHO film. (1985) (20 minutes)

For more information on establishing a diarrhoea training unit, write to the World Health Organization at headquarters or the appropriate Regional Office:

Director
Diarrhoeal Diseases Control Programme
World Health Organization
CH - 1211 Geneva 27
Switzerland

Organization mondiale de la Sante
Bureau regional de l'Afrique
Boite postale 6
Brazzaville
Congo

World Health Organization
Regional Office for the Americas/
Pan American Sanitary Bureau
525, 23rd Street, N.W.
Washington, D.C. 20037
United States of America

World Health Organization
Regional Office for the Eastern Mediterranean
P.O. Box 1517
Alexandria
Egypt

World Health Organization
Regional Office for Europe
8, Scherfigsvej
DK - 2100 Copenhagen
Denmark

World Health Organization
Regional Office for South-East Asia
World Health House
Indraprastha Estate
Mahatma Gandhi Road
New Delhi - 110002
India

World Health Organization
Regional Office for the Western Pacific
P.O. Box 2932
12115 Manila
Philippines

Diarrhoea Training Unit

Director's Guide

Prepared by the

WORLD HEALTH ORGANIZATION

DIARRHOEAL DISEASES CONTROL PROGRAMME

through a contract with

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