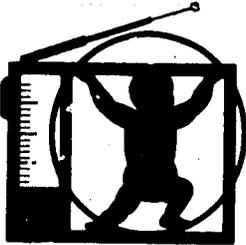


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Communication for Child Survival
HEALTHCOM

Office of Health and Office of Education • Bureau for Science & Technology • Agency for International Development

**Final Report: Clinical Training Project
for Administration of Oral Rehydration Therapy,
Program of Prevention and Control
of Diarrheal Diseases (PRECED)**

Martha Lopez de Montero

FINAL REPORT
Clinical Training Project for Administration of Oral Rehydration Therapy
Program of Prevention and Control
of Diarrheal Diseases (PRECED) Mexico

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U.S. Agency for International Development, HEALTHCOM,
Pan American Health Organization

AID/Mexican Government Agreement

AID Project No. 598-0616.12-523-12



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Office of Health and Office of Education
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Eduardo Chavez

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Peter Spain

INTRODUCTION

A. HEALTHCOM/Mexico Background

Mexico has one of the oldest experiences with oral rehydration therapy (ORT)* in the Western Hemisphere. Beginning in the 1940s with early oral rehydration solution (ORS) experiments, Mexico's program has laid an excellent theoretical basis for an effective national program. During the past six years, the program has emphasized the widespread provision of ORS throughout the Mexican Health Sector, training of physicians in diarrheal disease management, a rural ORT program mounted by the National Social Security System, and regular if modest public education via radio, television, and printed materials.

In 1984 PRITECH completed an assessment of Mexico's program and recommended among other things, four priority activities: standardization of ORS instructions throughout the health system; a national KAP of diarrhea management practices; a new ORS packet design; and continued emphasis on ORT training at the state level.

In July of 1985 the Secretariat of Health of Mexico requested HEALTHCOM assistance in two broad areas:

- Health Provider Training
- Market and Product Research and Development.

Through the cooperation of USAID, PAHO, and UNICEF, activities in these two areas began in mid-1986. A training and communications advisor was appointed jointly by USAID and PAHO to work with the National Oral Rehydration Program from June-December 1986. This is a final report on activities carried out under the guidance of that advisor.

HEALTHCOM is an initiative of the Office of Health and the Office of Education within AID's Bureau for Science and Technology. In Mexico it is jointly funded by the USAID Mission and this central bureau of AID.

In addition to its assistance in clinical training, HEALTHCOM is participating in Mexico's program to direct and assist four major research studies:

- ORS Packet and Name Design
- ORS Instructional Flyer
- Diarrhea Practices and Prevalence Study
- ORS Private-Sector Marketing Study.

* referred to in this report as oral hydration therapy (OHT)

Two other USAID projects are assisting the Mexican Child Survival program. PRITECH is focusing on health provider training, and SOMARC on market research.

Mexico should be ready to launch its national ORT program beginning in the Fall/Winter of 1987. At that time, HEALTHCOM will continue to assist Mexico in the promotion of the new ORS packet and instructional flyer. The objectives of this effort will be increased utilization of ORS and standardization of the instructions given to mothers for mixing and administering ORS. HEALTHCOM will participate in the design, preparation, and execution of a national ORS marketing strategy, utilizing public and private sector systems for distribution.

It was recognized from the beginning that the capacity already existed within Mexico to carry out an expanded program. USAID and HEALTHCOM assistance would be catalytic in nature, supplementing the Mexican government's existing commitment to ORT. As compared to other HEALTHCOM sites, HEALTHCOM involvement would be modest but highly selective; aimed at making strategic contributions to support the ongoing program.

B. Importance of Training

Although oral rehydration therapy has been in use in Mexico for over 30 years, diarrheal diseases still kill about 30,000 children under five every year in that country. Diarrheal diseases remain among the ten most frequent causes of mortality. In 1981, intestinal infections were the first cause of death for children under one year of age. That same year, nine percent of all bed-days in the Federico Gomez Children's Hospital of Mexico City were used to care for children with diarrhea, with an average stay of 12 days per patient. However, a recent national survey observed that an average of only 13 percent of children with diarrhea were treated with oral serum. The health delivery system itself bears some responsibility for these facts.

The primary obstacle to adoption of ORT is reluctance on the part of physicians and other healthcare providers to recognize the efficacy and the convenience of using ORT to treat dehydration from diarrhea. Their attitudes have in turn been passed on to mothers, who continue to accept and seek inappropriate forms of treatment.

The clinical training course described in this report was designed to overcome the resistance behind both professional and community acceptance of ORT, by bringing health personnel up to date. The training was carried out in the Oral Hydration Department of the Federico Gomez Children's Hospital of Mexico City.

The purpose of the training was to teach health personnel updated management of diarrhea cases and to prepare them for implementing Oral Hydration Therapy units (OHU) and clinical training for staff. Briefly, the goals of training were to:

- provide participants with the latest information about the physiopathological process of diarrhea and its clinical management;
- develop specific skills in the management of diarrhea cases;
- train participants in how to set up an Oral Hydration Unit in their own hospitals;

- prepare participants to train other health professionals and to set up other OHU's, according to the country's needs;
- support two regional conferences.

The training program extended from the second half of July through the first half of October 1986, continuing with support from the central level in supervising the creation of OHUs throughout the 19 states up until December 1986.

**FINAL REPORT ON THE CLINICAL TRAINING PROGRAM
IN ADMINISTERING ORAL HYDRATION THERAPY**

JULY 1986 - JUNE 1987

Dr. Martha Lopez de Montero
Consultant, AID/Health/PAHO in CDD.

AID/Mexican Government Agreement
AID Project No. 598-0616.12-523-12

I. BACKGROUND

Diarrheal diseases in Mexico, as in other Latin American countries, have been and continue to be one of the most important public health problems, each year taking about 30,000 lives of children under the age of five.

Awareness of this situation led the national authorities, through the Mexican Social Security Institute and the Secretariat for Health and Assistance, to design and implement, beginning in 1980, various alternatives for action aimed at reducing mortality by diarrhea in children under age five through oral hydration therapy.

In 1978, Lancet (1) classified as potentially the most important medical advance of the century the discovery that the intestinal transport of sodium and glucose are linked in such a way that the presence of glucose accelerates absorption of water and solutes, even in cases of diarrhea, which constitutes the scientific basis for oral hydration therapy (OHT), a form of treatment that is practical, simple, and realistic, and that can prevent from 60 to 70% of deaths by diarrhea. The procedure is effective in more than 95% of cases. Improvement is spectacular, which produces gratitude and trust in mothers towards the health worker who provided the OHT. This situation puts that health worker at an advantage for offering guidance in how to treat properly any new episodes of diarrhea, and to educate them in other primary health care measures such as hygiene habits and feeding, immunizations and family planning. All these efforts tend not only to reduce the frequency of diarrheal diseases, but also to improve the population's state of health.

However, the primary obstacle for implementation of this treatment consisted of physicians and other health-care professionals who, despite getting information from conferences, courses and national seminars held at the Federico Gomez Children's Hospital of Mexico City and in all the states of the republic, had not fully accepted the advantages of using OHT in treating dehydration from diarrhea.

In addition, their negative influence was a decisive factor in the behavior of mothers faced with an episode of diarrhea, inasmuch as mothers imitated the actions of health personnel, subjecting their little ones to fasting, indiscriminate use of antibiotics and antidiarrheal medicines, with the serious iatrogenic consequences they cause, leading children progressively to, or worsening, malnutrition, superinfections, more diarrhea, prolonged diarrhea plus malnutrition.

These impressive, disturbing facts are common to many countries on this and other continents, but it is even more impressive that they should continue occurring in Mexico, where the use of OHT began in 1959, when Dr. Victor Ceballos (2) demonstrated, in an experimental study carried out in "Jalisco Heights," a reduction in mortality rates from 32 to 7.4 per 10,000 children under age five using a household formula of oral serum containing sugar, salt, and sodium bicarbonate.

In 1980, Dr. Jesus Kumate, then director of the Federico Gomez Children's Hospital of Mexico City, formed a working group in which he included several physicians from the institution. Its basic objectives were to review the available information regarding diarrhea treatment, especially the use of solutions with glucose and sodium, to draft a research protocol and procedures for its use.

The group suspended its activities when hospital management changed.

Comparing mortality rates from diarrhea in nursing infants and school-age children in Mexico and other countries (Diagram 1), one can see that this problem was still a major one in Mexico in 1982, despite the considerable reduction in reported deaths between 1960 and 1980. Nonetheless, the percentage of those under one year of age increased from 44 to 56% (Diagram 2).

Another problem analyzed in 1981 was the high frequency of hospitalization of children with diarrhea, with 9% of all beds in the Children's Hospital of Mexico City being occupied by these patients, with an average hospital stay of 12 days. At ISSSTE [Institute of Social Security and Services for Government Workers], 58,000 bed-days were used, and more than 300,000 at the IMSS [Mexican Social Security Institute]; most of the patients hospitalized were under five years of age, with average stays of 6 to 8 days.

This background gradually created an awareness on the part of health personnel of the magnitude and seriousness of the problem.

II. START OF THE PROGRAM OF ORAL HYDRATION IN DIARRHEA CASES

In 1983, with the consent of Dr. Guillermo Soberon, Secretary of Health, the national program for oral hydration in diarrhea cases was begun; it was coordinated by the National Institutes of Health, with Dr. Jesus Kumate R., the present Undersecretary of Health Services, in charge.

In 1984 many activities were carried out; among the most important were:

1. International seminar-workshop on oral hydration in diarrhea cases, the purpose of which was to update and motivate all institutions in the health sector and to gain their commitment to carry out the national program.
2. First national course in planning and management of programs to control diarrheal diseases.
3. Design of the plan of action for the program to control diarrheal diseases by 1985.

These three very important activities took up time and both domestic and international resources, but one of the basic results was to promote and move ahead the coordination and support of international organizations interested in activities promoting infant survival through a strategy of primary health care.

In January-February 1985, a mission from PRITECH (Technology Project for Primary Health Care) visited the country with support from the Agency for International Development, which updated the diagnosis of the DDC program situation and offered a series of suggestions and recommendations to reduce and eliminate the obstacles detected that were hindering normal deployment of the DDC and OHT program.

Among the principal recommendations in response to the limitations encountered and in order to quickly broaden the program's effective coverage were the following:

- Execution of an aggressive training program in the use of OHT among physicians and other health personnel.
- Design and implementation of operational research regarding consumer beliefs and practices, product acceptance, effectiveness of educational materials, and verification of input.
- With the results of this research, design and implementation of a national program in health communication for diarrheal diseases and use of OHT.

III. DESIGN AND EXECUTION

CLINICAL TRAINING PROGRAM IN ORAL HYDRATION THERAPY

Design of the training program is described below; it responds to the need to overcome resistance on the part of health-care professionals.

1. Purpose:

To train health personnel in updated administration of diarrhea cases and to prepare them for setting up OHT units and clinical training of personnel under them.

2. Objectives:

To support creation of an oral hydration therapy unit in the 19 states involved in the program.

To hold four regional conferences in previously selected states.

4. Selection Procedure:

States were selected based on:

- High rates of morbidity and mortality from diarrhea.
- Outlying states.
- High-risk states detected by the national survey of diarrhea morbidity and mortality.

When selections are made in each state, the personnel should meet the following requisites:

- 1 pediatrician, preferably emergency chief, chief of teaching, with medical leadership and administrative authority for setting up an OHU in his home hospital.
- 1 nurse, with supervisory responsibility and technical and administrative leadership in the state, and personal motivation for the program; must be able to work as a team with the pediatrician.
- 1 physician or nurse, responsible for the DDC and OH program at the state level.

5. Organization and Operation

Responsibility for administrative organization was assigned to the General Office of Preventive Medicine through the Area Office for Infectious and Parasitic Diseases, while technical responsibility fell to the Children's Hospital of Mexico City through its teaching division and the Oral Hydration Department.

AID/PRITECH/HEALTHCOM/PAHO were the international organizations that offered their economic support and consultancy so that the program would run smoothly.

- A) The General Office of Preventive Medicine established communication with the health authorities of the 19 states (SS/SCSP) to gain their motivation and participation in the activities to be carried out with regard to the proposed objectives.
- B) The GOPM and the SS/SCSP selected participants according to the pre-established criteria.
- C) They agreed to support the creation and operation of the oral hydration unit that would serve to train the state's health-care personnel and to set up other oral hydration units in accordance with the health conditions in the participants' territory.

Training in administration of OHT lasted one week (Monday to Saturday) in the Oral Hydration Department of the Federico Gomez Children's Hospital of Mexico City, with a schedule of 8:00 am to 1:00 pm and 2:00 pm to 5:00 pm.

The training program covers the following units or topics:

- Physiopathological bases of diarrhea.
- Case handling.
- Epidemiology of diarrhea.

- Creation and administration of OHU's.
- Records.
- Research.
- Administrative evaluation.

These topics or units were carried out on a schedule, with a corresponding timetable; descriptive cards attached.

The clinical training was backed up with bibliographic sessions, case presentation in discussion groups; also discussed were the bases for creation of an OHU in each home hospital, the purpose of which would be to train at least 20 health-care workers in each state during the year, which would thus multiply the units in other departments as needed.

Training was done in groups of six; i.e., personnel from two states at a time, with instruction from the staff of the Oral Hydration Department, and each of the participants received support material which would be used in training personnel in the states.

The bibliographic support material consisted of:

- 1 model guidebook for clinical training (Appendix 1).
- 10 articles on OHT and diarrhea produced at the Federico Gomez Hospital.
- 10 articles on the same topics, focusing on the national and international program to control diarrheal diseases.

The educational material turned over consisted of:

- A set of slides, the handbook for organizing OHT, and procedures.
- Bibliographic references on OHT and diarrhea.

At the start and end of each course a knowledge evaluation questionnaire was given to measure any changes achieved; a curricular certificate of participation in the course was also given

As a practical task, in addition to handling clinical cases, each state team designed a work plan for the creation of the OHTU, which served as a guide for subsequent supervisory and support visits.

The trained personnel received one visit during the year to observe the results of the subprogram and to offer advice and support if necessary; these visits were carried out by GOPM and/or CHMC personnel with the participation of PAHO and/or AID personnel.

The GOPM, in coordination with the SS/SCSP, organized and held regional conferences in the cities of Oaxaca, Oaxaca; Guadalajara, Jalisco; Culiacan, Sinaloa; and Monterrey, Nuevo Leon, in order to keep up motivation and bring a greater number of the region's professionals up to date in activities related

to the program to prevent and control diarrheal diseases. These meetings, held as seminar-workshops, were attended by about 1600 health workers, especially pediatricians, general practitioners, nurses, and social service assistants from the country's 31 states (Appendix 2).

RESULTS OBTAINED

1. Training

A) **Federico Gomez Children's Hospital of Mexico City:** The objectives set were fully realized; training goals were more than 100% met. Much more important is the impact achieved in changing the behavior of professionals, as reflected not only in the increasing use of OHT in the OHTU's organized by them, but also in the important multiplying function they performed in returning to their home bases (Appendix 2).

B) States

As of February 1987 the number of personnel trained by state exceeded the goals set; in some states such as Nuevo Leon, the number reached 80 professionals; in Oaxaca, 40.

The number of personnel trained by them, and the mobilization of the health sector in their states through the associations, colleges, universities and institutions to which they belong, clearly show their interest and motivation.

C) Seminar-workshops on diarrheal diseases and oral hydration

Four meetings were held, organized by the states themselves; with the support of the central government's General office of Preventive Medicine, Children's Hospital of Mexico City, and AID/PAHO, local experiences were discussed, along with rational bases for use of OHT. The seminars were held in 1986 in Oaxaca, Oaxaca, and Guadalajara, Jalisco; in 1987, in Monterrey, Nuevo Leon, and Culiacan, Sinaloa, with about 1,600 health-care professionals from 30 states in attendance, not including Hidalgo (Appendix 3).

2 ORGANIZATION AND OPERATION OF OHT UNITS

Each of the participants in the clinical training organized an OHTU upon returning from the training, with the exception of Jalisco and Chiapas, the former due to a political decision and the latter due to a lack of physical space. In several states OHTU's have been organized in other hospitals and jurisdictions.

The present number of OHTU's in the country is 25, not including the Oral Hydration Department in the Federico Gomez Children's Hospital.

It is important to point out that as a direct result of the clinical training program in OHT the Children's Hospital of Mexico City decided in 1987 to routinely incorporate a monthly monographic course in clinical training for oral hydration therapy. (Schedule attached.)

As the Hospital enjoys such enormous prestige in Mexico and Latin America, this decision has had a major impact, with full registration until October; it has become necessary to schedule courses outside the program in order to meet demand both in Mexico and from abroad.

At the present time, we believe it would be possible to use the Oral Hydration Department of the Children's Hospital of Monterrey under the direction of Dr. Hector Moreno, pediatrician and assistant director of this hospital, which has all facilities necessary to organize and execute the training.

IV. CONCLUSIONS

The project was carried out on schedule and suitably smoothly.

Objectives were achieved, and the goals set were reached.

There were some drawbacks in terms of physical space; in March 1987 the management of the Federico Gomez Children's Hospital requested funds for remodeling the teaching area.

However, the reasons for this were technical, inasmuch as the hospital was repairing damage caused by the 1985 earthquake.

In any case, the hospital's classrooms were used for the groups' teaching meetings, and hence there was no effect on the courses.

REFERENCES

1. The Most Important Advance of the Century. Lancet 1978: II: 300.
2. Ortiz MC., Ceballos C.V.: Household Oral Rehydration, Pilot Test in a Rural Region of Mexico. Vol. Epidemiologia Mex. 1961; 25:112.
3. Mota Hernandez Felipe: Oral Hydration Program for Diarrhea, 1983-1986. Evaluation and Perspectives - Nov. 1986.
4. Annual Statistics in World Health 1984, SSA (Mexico City 1984).
5. General Office of Statistics, Secretariat of Planning and Budget.

REPORT ON ACTIVITIES FOR THE SECOND HALF OF THE YEAR

Whereas the National DDC Program of Mexico should have the necessary support, independently of sources of financing, we have achieved excellent coordination among the various agencies for multi- and bilateral cooperation which collaborate with the Mexican government in consolidating the DDC Program throughout the country (PAHO-AID-UNICEF-PRITECH-HEALTHCOM).

Integration was achieved in scheduling activities, technical-administrative programming, clinical training, followup for the personnel trained, and support for implementation of PRECED in the states through supervisory visits.

The work plan for the second half of the year was carried out with this focus.

Fortunately, Mexico is responding very actively to suggestions made by the HealthCom and PRITECH personnel who have visited the country on several occasions.

Dr. William Smith	-	February and May, 1986
Ms. Marie Dubus	-	August and October, 1986
Ms. Carole Bergren	-	August and October, 1986
Dr. Peter Spain	-	October, 1986
Dr. Daniel Pizarro	-	October, 1986

The country is also assuming leadership in Latin America, as demonstrated by invitations to personnel in the Mexican program to participate in meetings relating to DDC and OHT in Brazil, Ecuador, Peru and Uruguay.

The following activities were carried out in coordination with the PAHO/AID consultant:

A. PROGRAMMING

A work plan was designed for the period June-December 1986, covering two areas:

- Clinical training in OHT
- Research and development of educational materials

In order to fulfill this work plan, AID/MEX signed two agreements, one with the General Office of Preventive Medicine, which took charge of clinical training through the Federico Gomez Children's Hospital of Mexico City, and another with the General Office of Epidemiology for the research area.

B. EXECUTION OF ACTIVITIES

1. Training

- 1.1 Design of a guidebook for the clinical training course in OHT (Appendix 1).
- 1.2 Participation in and coordination of 12 clinical training courses in handling the child with diarrhea and use of OHT in

the Children's Hospital of Mexico City, with 69 participants from 19 Mexican states, the federal district, and IFD (Appendix 2).

- 1.3 Selection and presentation to each participant of 25 bibliographic articles and a set of 50 slides as teaching support for reproducing the course in the state OHTU's.
- 1.4 Financial support for creation of an OHTU in each of the 19 states having personnel trained in the FGCHMC. There are 11 state OHTU's in operation.
- 1.5 Collaboration in organization and teaching participation in two regional seminars on DDC and use of OHT, in Oaxaca and Jalisco, cofinanced by AID, PAHO, and UNICEF (Schedule, Appendix 3).
- 1.6 Collaboration with the PRITECH team during their 3-week visit in November 1986, Drs. Peter Spain and Daniel Pizarro, and participation in observation tours in Chiapas, Oaxaca, Tlaxcala, with this group.
- 1.7 Teaching participation in the DDC Supervisory Skills course in the state of Queretaro.
- 1.8 Teaching participation in updating course on DDC at the Annual Meeting of the Mexican Public Health Society.
- 1.9 In addition, the following were done with PAHO support:
 - 15 DDC supervisory skills courses.
 - 2 courses in management and planning of DDC programs.
 - 12 supervisory visits to the states (Appendix 4).

2. Research and Development of Communication Materials

- 2.1 A Mexican professional was contracted for to coordinate activities relating to research in:
 - envelope design;
 - instructions for serum use.

Both are proceeding on schedule. the IMOP Agency, Inc., has already turned in the results of its qualitative research to the McCann Promotional and Advertising Agency, which is responsible for the envelope design and instructions for its use, which are in the design and testing stage.

- 2.2 With the agreement signed with the General Office of Epidemiology, the questionnaire is ready to be given for the National Survey of Practices and Prevalency of Mothers Dealing with Diarrhea and Dehydration.

Although there were some involuntary delays, and due to the GOE's work load, it is expected that in December 1986 there

will be preliminary results to serve as a basis, together with the foregoing, for the design of a national plan for health communication on the topic "Diarrhea and its Treatment," for next year, with technical and financial support from Healthcom.

2.3 A briefing was held for Mario Bravo regarding the DDC and OHT program; Dr. William Smith's visit is awaited to adjust details in the activities to be held 1987-1988.

2.4 Request for and coordination of activities of the short-term consultant (PRITECH) for preparation of documents on: a) administration of medication in treatment of diarrhea; b) inclusion of DDC and OHT in curricula of medical schools.

3. General Support for the DDC Program

3.1 Preparation of work schedules and participation in several meetings held with Mexican and international personnel visiting the country.

3.2 Participation in meetings at the Undersecretariat of Health Services with high-level officials in order to to coordinate DDC program activities at the national level.

3.3 Collaboration in designing a simplified manual on diarrhea for community leaders in the National Family Planning Program.

TABLE 1

DIARRHEA MORTALITY RATE*

Country	Year	Nursing	Pre-School	School
West Germany	1982	2.3	0.4	0.0
Japan	1982	3.3	0.4	0.0
U.S.A.	1980	3.5	0.2	0.0
France	1981	8.3	0.3	0.1
East Germany	1978	27.6	0.8	0.0
Bulgaria	1982	62.0	1.4	0.1
Rumania	1982	134.2	4.6	0.1
Chile	1981	133.7	5.0	0.6
Kuweit	1982	219.3	6.2	0.8
Brazil	1980	612.2	36.2	1.9
Mexico	1982	717.3	59.6	4.5
El Salvador	1981	745.2	76.8	6.6
Paraguay	1980	1,622.9	142.2	6.3

*Per 100,000 inhabitants.

Annual World Health Statistics, 1984, SSA (Mexico City, 1984)

TABLE 2

DEATHS BY DIARRHEA AND AGE GROUPS IN MEXICO

Group/Year	1960		1980	
	#	%	#	%
Under 1 year	26,360	44	21,730	56
1-4 years	21,235	35	7,551	20
5 years and over	12,487	21	9,185	24
TOTAL	60,082		38,466	

Source: General Office of Statistics S.P.P.

**Federico Gomez Children's Hospital
of Mexico City**

**CLINICAL TRAINING
IN ORAL HYDRATION THERAPY**

Coordinators:

Dr. Felipe Mota Hernandez

Dr. Luis Velasquez Jones

Enrollment: Limited

Registration: \$15,000

Reports and Registration:

**Teaching Division
Dr. Marquez 162, Cuauhtemoc Branch
P.O. Box 06720, Mexico City, Mexico
Tel. 761-02-70**

APPENDIX 2
DIAGRAM 3

PROGRAM FOR PREVENTION AND CONTROL OF DIARRHEAL DISEASES
FEDERICO GOMEZ CHILDREN'S HOSPITAL

CLINICAL TRAINING
1986

Course	Date	Entity	Personnel Trained		Total
			Phys.	Nurses	
1	June 16-20	Jalisco	3	0	3
2	July 21-25	Mexico	2	1	3
		Hidalgo	1	2	3
3	July 28 - Aug. 1	Colima	2	1	3
		Morelos	1	3	4
4	August 18-22	Oaxaca	1	2	3
		Guerrero	2	1	3
5*	Sept. 2-5	Nuevo Leon	2	1	3
6	Sept. 8-12	Queretaro	2	1	3
		Chihuahua	1	1	2
7	Sept. 22-26	Sonora	1	2	3
		Veracruz	2	1	3
8	Sept. 29 - Oct. 3	Tabasco	2	1	3
		Tlaxcala	2	1	3
9	October 6-10	Campeche	2	1	3
		Puebla	2	1	3
10	October 13-17	Guanajuato	2	1	3
		DIF D.F.	0	3	3
11	October 20-24	D.G.S.P. D.F.	1	3	4
		Colima	1	1	2
12**	November 10-14	Quintana Roo	1	2	3
		Chiapas	1	1	2
			<u>34</u>	<u>31</u>	<u>65</u>

* One physician from Guatemala included.

** 2 pediatric residents and one assistant social worker included.
Total personnel trained: 69.

MAPA 2 ~~Seminar-Workshop on diarrheal diseases and oral hydration~~
SEMINARIO-TALLER DE ENFERMEDADES
DIARREICAS E HIDRATAACION ORAL Host states.
ESTADOS SEDE. MEXICO 1986-87.



Sede Host
Estados que participaron en los Seminarios-Taller.
States participating in the seminar-workshops

FEDERICO GOMEZ CHILDREN'S HOSPITAL OF MEXICO CITY

DEPARTMENT OF ORAL HYDRATION

PARTICIPANTS IN THE CLINICAL TRAINING COURSE IN MANAGING
THE CHILD WITH DIARRHEA AND USING OHT

JALISCO STATE - June 16-20 (1st course)

1. Dr. Miguel Angel Moreno Nunez
Chief of Primary Medical Care
and Jurisdictional Teaching
Work: Francisco Gonzalez Leon y
Leandro Guevara
Lagos de Moreno, Jal.
CP 47400
Tel. 2.16.11 and 2.06.24
Home: Juarez Norte No. 2 Int. 3
Lagos de Moreno, Jal.
CP 47420
Tel. 2.00.94
2. Dr. Cesar Rene Navarro Hernandez
Director, Colegio Militar Hospital
Work: Hospital Colegio Militar S/N.
Col. Ejidal
Cd. Guzman, Jal. CP 49000
Tel. 2.50.40
Home: Independencia No. 92
Cd. Guzman, Jal.
CP 49000
Tel. 2.32.82
3. Dr. Edgar Manuel Vasquez Garibay
Chief of Pediatrics
Work: Hospital General de Occidente
Av. Zoquipan No. 1050
Zapopan, Jal.
Tel. 24.93.48
Home: Jesus Garcia No. 3050
Providencia
Guadalajara, Jal.
CP 44670
Tel. 41.00.09

MEXICO STATE - July 21-25 (2nd course)

4. Dr. Simon Garcia Morales
Work: Hospital General Lic. Adolfo
Lopez Mateos (SSA)
Paseo Tollacan s/n
Toluca, Mexico
Tel. 7.35.45

5. Nurse Luz Maria Tirado Gonzalez
Floor chief, General Hospital
(Toluca) Work: Hospital General Adolfo
Lopez Mateos
Paseo Tollacan s/n
Toluca, Mexico
Tel. 7.35.45
6. Dr. Adan Juarez Reyes
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Transmissible Diseases (Toluca) Work: Secretariat of Health
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HIDALGO STATE - July 21-25

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Control (Pachuca, Hgo.) Work: Secretariat of Health
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9. Nurse Rosa Maria Reyes Arellano
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COLIMA STATE - July 28 - August 1 (3rd course)

10. Dr. Rafael Pineda Mendoza
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(Pediatrician) Work: Secretariat of Health and Social
Welfare
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Colima, Col.
Tel. 2.46.73
11. Nurse Margarita Sandoval Moreno
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Hidalgo No. 144
Colima, Col.
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Tel. 2.78.05
12. Dr. Rene Resendiz Miranda
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MORELOS STATE - July 28 - August 1 (3rd course)

13. Dr. Rodolfo Gatica Marquina
Pediatrician
Work: Secretariat of Health
Av. Francisco I. Madero No. 16
Col.; Vicente Guerrero
Cuernavaca, Mor.
Tel. 15.85.24
14. Nurse Maricela Maya Garcia
Nurse Supervisor
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Col. Flores Magon
Cuernavaca, Mor.
Tel. 14.14.44
15. Nurse M. Norberta Real Dominguez
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Work: Hospital Civil
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No phone.
16. Nurse Martha Trujillo Valle
State Supervisor of Mother-
Child Program and Chief of
PRECED Program
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OAXACA STATE - August 18-22 (4th Course)

17. Nurse S.P.M. del Pilar Sanchez
Villavicencio
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Work: Secretariat of Health
Jesus Carranza No. 108 Int. 1
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18. Nurse Edith Concepcion Valle Lopez
Nurse Supervisor
Work: Hospital General - Secretariat
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Dr. Aurelio Valdivieso
Av. Hidalgo No. 1604
Oaxaca, Oax.
19. Dr. Eduardo Santiago Palacios
Pediatrician
Dr. A. Valdivieso General Hosp.
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Oaxaca, Oax.
CP 68000
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GUERRERO STATE - August 18-22

20. Dr. Alejandro F. Leyva Galindo
Chief, Office of Transmissible
Diseases, Sec. of Health
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Tel. 2.70.32

21. Dr. Salvador Jorge Ramirez
Chief of Pediatrics, Gen. Hosp.,
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Hydration Dept., Gen. Hosp.
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Chilpancingo, Gro.
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CHIAPAS STATE - August 25-29
GUANAJUATO STATE - August 25-29 (DID NOT ATTEND)

NUEVO LEON STATE - September 2-5 (5th Course)

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Deputy Director, Children's Hosp.
of Monterrey, Sec. of Health
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Fracc. Centro
Monterrey, N.L.
Tel. 59.24.55 - 54.32.25
24. Dr. M. A. Lourdes Cruz Valencia
Chief, Dept. of Primary Care
Services, State Sec. Health,
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Monterrey, N.L.
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Nurse in Charge of Emergency Dept.
Children's Hospital
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C. de Queretaro
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Monterrey, N.L.
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QUINTANA ROO STATE - September 2-5 (DID NOT ATTEND)

QUERETARO STATE - September 8-12 (6th course)

27. Dr. M. Olga Velazquez Gonzalez
Chief of Dept. of Epidemiology
and Preventive Medicine
Health office
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Home: Hacienda Grande No. 1000
Depto. 402 Edif. E.
Fracc. Las Haciendas
Queretaro, Qro.
28. Dr. Minerva Escartin Chavez
Chief of Pediatrics
General Hospital "A" SSA
Home: Jose Asuncion Romero No. 44
Col. Jardines de Queretaro
Queretaro, Qro.
Tel. 278.63

29. Nurse M. del Carmen Erendira Pimentel
Lora
Chief of Nurses, Queretaro Gen.
Hospital
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CHIHUAHUA STATE - September 8-12

30. Dr. Bertha Alicia Ramos
Chief of FP and DOC program
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Home: E. Talavera No. 1625
Col. Lins
Chihuahua, Chih.
Tel. 15.42.59
31. Nurse Ernestina Morales Reyes
General Nurse, Mother-Child Center
Home: Calle Cebu No. 7215
Fracc. Avicola
Chihuahua, Chih.

SONORA STATE - September 22-26 (7th course)

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Mother-Child Hospital, Hermosillo
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Home: Adolfo de la Huerta No. 409
Col. Pitic
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33. Nurse Grauben Federico Davila
State Chief of Diseases, Dept.
of Primary Care Services
Work: Sevicios Medicos de Sonora
Aguirre Palancares Final
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Tel. 6.62.46 - 6.61.42
Home: Leopoldo Ramos No. 278
Hermosillo, Son.
Tel. 4.65.16
34. Nurse Elsa Wicochea Gonzalez
Nurse Supervisor
Work: Hospital Materno Infantil
Gandara y Jose S. Healy
Hermosillo, Son.
Tel. 5.10.95
Home: Puebla No. 56 Novena e Iturbide
Hermosillo, Son.
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VERACRUZ STATE - September 22-26

35. Dr. Miguel Irigoyen Morales
Chief of Pediatric Emergencies
Veracruz General Hospital
Work: Hospital General de Veracruz
20 de Noviembre, Esq. Alicia
Perez
Veracruz, Ver.
Tel. 32.36.90

- Home: Cristobal de Olid 167
Fracc. Reforma
Veracruz, Ver.
Tel. 35.00.85 - 35.13.15
36. Dr. Francisco Bello Vallejo
Pediatrician
Work: Hospital General
Servicios Coordinados (SSA)
Nicolas Bravo
Cosamaloapan, Ver.
Home: Independencia 904 entre Serdan
y Fentanes
Cosamaloapan, Ver.
37. Nurse M. Teresa Alvarez Ochoa
Chief of Nursing Infants Dept.
General Hospital
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20 de Noviembre esq. Alicia
Perez
Veracruz, Ver.
Tel. 32.36.90
Home: Cristobal de Olid No. 167
Fracc. Reforma
Veracruz, Ver.
Tel. 35.52.83

TABASCO STATE - Sept. 29 to Oct. 3 (8th course)

38. Dr. Hector Perez Perez
Director, Comalcalco Reg. Hosp.
Work: Hospital Regional de Comalcalco
Tabasco
Reforma Norte No. 460
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Comalcalco, Tabasco
39. Dr. Carlos Elio Rios Perez
Physician with the Pediatrics Dept.
Work: Hospital General Gustavo
A. Roviroso
Calle No. 3
Col. Recreo
Villahermosa, Tabasco
Tel. 2.80.00
Home: Hostensias No. 101 Fracc.
Villa de las Flores
Col. Industrial
Villahermosa, Tabasco
40. Nurse Judith Rafaela Zavaleta
Vargas
Nurse, Pediatric Emergency Dept.
Work: Hospital General Gustavo
A. Roviroso
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TLAXCALA STATE Sept. 29 - Oct. 3

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Home: Callejon Abasolo No. 9
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CP 72100
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Prolongacion Lardizabal
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Esq. 5 de Febrero
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Work: Hospital General de Apizaco
Prolongacion Lardizabal
Rumbo a San Benito
Apizaco, Tlax.
Home: Alvaro Obregon No. 8
San Bernardino Cotula
Tlaxcala, Tlax.

PUEBLA STATE - October 6-10 (9th course)

44. Dr. Manuel Cernuda Quiroz
Pediatrician
Work: Centro de Salud No. 2 (SSA)
4 Oriente No. 408
Puebla, Pue.
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Home: 4 Sur No. 105 - 301
Puebla, Pue.
Tel. 41.93.88
45. Nurse Carolina Lezama Santos
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Home: Hidalgo No. 5508
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CAMPECHE STATE - October 6-10

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Campeche, Camp.
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GUANAJUATO STATE - October 13-17 (10th course)

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Medicine
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Guanajuato, Gto.
51. Dr. Ernestina Soria Puente
Pediatrician
Work: Hospital General de Guanajuato
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Pardo No. 5
Guanajuato, Gto.
Home: C. Arniba No. 18
Fracc. San Javier
Guanajuato, Gto.

52 Nurse Irene Duran Valtierra
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Work: Hospital General de Guanajuato
Pardo No. 5
Guanajuato, Gto.
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Home: Calle Carmona No. 1
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INTEGRATED FAMILY DEVELOPMENT (I.F.D.) October 20-24

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54. Dr. Benigno Torres Pichardo
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55. Dr. Martha Gpe. Diaz Sanchez
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COLIMA STATE - October 20-24

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Pediatrician

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Nursing Assistant (General)

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GENERAL OFFICE OF PUBLIC HEALTH IN MEXICO CITY - October 20-24

58. Dr. Carmen Avila Rodriguez
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59. Nurse Juana Moreno Bahena
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60. Nurse Sofia Garcia Garcia
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61. Nurse Carmen Teresa Ortiz Razo
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QUINTANA ROO STATE - November 10-14 (12th course)

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CHIAPAS STATE - November 10-14

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INVITED TO THE COURSE OF NOVEMBER 10-14

67. Dr. Alma Rosa Quezada Garcia
Pediatric Resident III
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68. Dr. Luz de Lourdes Caballero
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APPENDIX 3

TABLE 4

PARTICIPATION BY HEALTH PERSONNEL IN STATE SEMINARS

ON DIARRHEAL DISEASES AND ORAL HYDRATION

MEXICO 1986-1987

HOST STATE	PARTICIPATING STATES	NO. OF PARTICIPANTS
OAXACA, OAXACA	Puebla	
	Yucatan	
	Tabasco	
	Chiapas	
	Quintana Roo	
	Veracruz	
	Tlaxcala	
	Oaxaca	200
GUADALAJARA, JALISCO	Durango	
	Campeche	
	San Luis Potosi	
	Nayarit	
	Aguas Calientes	
	Colima	
	Michoacan	
	Guanajuato	
	Queretaro	
Jalisco	200	
CULIACAN, SINALOA	Baja California Sur	
	Baja California Norte	
	Chihuahua	
	Sonora	
	Durango	
	Sinaloa	450
MONTERREY, NUEVO LEON	San Luis Potosi	
	Veracruz	
	Coahuila	
	Tamaulipas	
	Nuevo Leon	750
	TOTAL	1,600

FEDERICO GOMEZ
CHILDREN'S HOSPITAL OF MEXICO CITY

GUIDEBOOK
CLINICAL TRAINING COURSE IN
ORAL HYDRATION THERAPY

**Secretariat
of Health**

**Pan American
Health Organization**

**International
Development Agency**

The following contributed to making this guidebook a reality and gave basic support in reaching the objectives set forth in the CLINICAL TRAINING SUBPROGRAM:

DR. FELIPE MOTA HERNANDEZ
Chief of the Teaching Division
Children's Hospital of Mexico City

DR. MARTHA LOPEZ DE MONTERO M.S.P.
Maternal-Child Health Consultant -
Diarrhea Control Programs
PAHO/WHO-AID

The Handbook of Standards and Procedures, designed by Dr. Eduardo Missoni and psychologist Blanca Sierra with support from UNICEF, is part of this guidebook.

We wish to thank the secretarial staff of the Children's Hospital of Mexico City for their cooperation and dedication, especially Miss Laura Leon, who, through her dedication and caring, made the typing of this work possible.

GUIDEBOOK FOR THE CLINICAL TRAINING COURSE IN ORAL HYDRATION THERAPY

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2. Justification
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 - 3.2 Objectives
 - 3.3 Time and space limits
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 - Training timetable
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1. Basic Information and Background

Diarrheal diseases have traditionally characterized infant pathology in developing countries. In Mexico, they remain among the 10 most frequent causes of general mortality, with rates of 861.6 per 100,000 live births for mortality in children under age one and 83.8 in those under four years. In 1980, enteritises accounted for 21% of the new cases of reported transmissible diseases. In the IMSS [Mexican Social Security Institute] in 1981, two million people were treated for intestinal infections; these were the first cause of death in the population under one year of age -- 3.8 per 1,000 live births -- and in groups under four years of age -- 12 per 100,000 users. That same year, 9% of all bed-days in the Federico Gomez Children's Hospital of Mexico City were used to care for children with diarrhea, with an average stay of 12 days per patient. In the ISSSTE [Institute of Social Security and Services for Government Workers], 58,000 bed-days were taken up with an average stay of eight days; 95% of the total was for children under age five and 87% under age one. In the IMSS, 305,985 bed-days were taken up, with an average stay of six days per patient, 86% for children under age five.

It is obvious that these figures do not represent the full magnitude of the problem; inadequate statistical records, poor access to rural populations, and the problem of insufficient national coverage quite probably contribute to making the data published lower than the actual figures, but even these serve to demonstrate the magnitude of the problem.

In the preliminary report by the General Office of Epidemiology of the SSA [Secretariat of Health and Assistance] on a survey of morbidity, mortality and treatment of diarrhea in Mexico carried out in November and December 1985, the following results are given for children under five years of age: - Lapsic [?] prevalence of 16.3%, which is approximately equivalent to 4.9 episodes of diarrhea per year in each child under five years and age, and a rate of mortality associated with diarrhea of 42.7%. It may be inferred from these results that in 1985 approximately 45,000 children under age five died as a consequence of diarrhea throughout Mexico.

Furthermore, the problem of infant diarrhea, with all its consequences, is quite complex. It depends on several factors, and there is no simple solution to it. The habits of the host, his tender age, the lack of food hygiene, pathogenic agents, the lack of information on the part of the mother and family members regarding health matters, and even inadequate preparation on the part of the health team, promote this illness. In addition, doctors whose concepts regarding the administration of antibiotics and other intestinal astringents are outdated can complicate the situation. Furthermore, overcrowding, overpopulation, fecalism, problems with drainage and sewers, inadequate treatment of solid wastes, the precarious supply of drinking water, and the deteriorating environment are also factors at work here and that should be taken into account.

The World Health Organization and UNICEF have estimated that at least 60 to 70% of the deaths associated with diarrhea are directly connected with dehydration. Over the last two decades it has been demonstrated that this complication, which in varying degrees is present in virtually all children with diarrhea, can be prevented or corrected by administering oral serum with a formula developed and recommended by the World Health Organization, containing

sodium, glucose, potassium, and bicarbonate or citrate. Suitable use of this form of treatment makes it possible to avoid at least 60 to 70% of deaths by diarrhea that now occur.

Hence, the decision by the country's health authorities to carry out a national program of oral hydration was a wise choice that complements other measures so that, together with an improvement in indirect services, they can improve health conditions for our children.

2. Justification

In the 1970's, demonstration of the greater intestinal absorption of sodium and water with the addition of glucose to a saline solution made it possible to revolutionize cholera therapy and has led to proof that oral hydration treatment in diarrhea can significantly reduce infant mortality from this cause and avoid a great many complications associated with intravenous therapy (phlebitis, septicemia, etc.).

Oral hydration and early resumption of feeding for the child with diarrhea and dehydration is aimed at assuring his prompt recovery while minimizing or avoiding his stay in hospital. This will be achieved through proper "management of the child with diarrhea" at all levels, from the institution to the community, through training of doctors and nurses and with the active participation of mothers in caring for their children.

However, these concepts have been difficult to implement, inasmuch as one of the obstacles to promoting the use of oral hydration therapy by the mother has been resistance on the part of doctors.

It was observed in the national survey and in OHT that on average only 13% of children with diarrhea were treated with oral serum.

This Clinical Training Course was designed to overcome this resistance and bring health personnel up to date; it will be carried out in the Oral Hydration Department of the Federico Gomez Children's Hospital of Mexico City.

3. Programming

3.1. Purpose

To train health personnel in the updated management of diarrhea cases and to prepare them for implementing Oral Hydration Therapy units and clinical training for staff.

3.2. Objectives

- a) To provide the participants with the latest information in order to improve their understanding of the physiopathological process of diarrhea and its clinical management.
- b) To develop and/or update skills in the management of diarrhea cases.

- c) To train participants in how to set up an Oral Hydration Unit (OHU) in their own hospitals.
- d) To prepare the participants to train other health personnel for "Proper Management of the Child with Diarrhea" and to set up other Oral Hydration Units, according to the country's needs.
- e) To undertake continuing updating activities by promoting and supporting two regional conferences.

3.3 Time and Space Limits

The clinical training program will extend from the second half of July through the first half of October 1986, continuing with support from the central level (HIMFG) in supervising the creation of OHU's throughout the 19 states up until December 1986.

4. Plan of Action

4.1 Stages Prior to Execution

- a) Criteria for selection of both states and participants have been set and defined (Appendix 1).
- b) A tentative 40-hour schedule to serve as a syllabus has been drawn up.
- c) The support bibliography has been selected.
- d) The audiovisual material that will be reproduced and given to the participants has been reviewed and selected.

4.2 Standards and Procedures to Be Followed

4.2.2 Goals

For the initial stage from July to October, the following were proposed:

- Training 57 participants, 3 per state in the country's 19 states (Appendix 1).
- Supporting creation of one oral hydration therapy unit in each of the 19 states.
- Holding two regional seminars in the states, one in Guadalajara, Jal., on November 28 and 29, and the other to be selected at a later date.

4.2.3 Responsible Institutions

- General Office of Preventive Medicine (DGMP)
- General Office of Coordination Support (DGACR)

- Secretariat of Health and Headquarters of Coordinated State Services included in this Subprogram (SS/SCSP)
- Children's Hospital of Mexico City
- AID/PRITECH
- Pan American Sanitary Office (PAHO)

The responsibility of each of the participating institutions will be as follows:

- The General Office of Preventive Medicine will organize, supervise and evaluate the Subprogram.
- The General Office of Support for Regional Coordination will facilitate any necessary administrative procedures that may be requested in relation to the Subprogram.
- The Children's Hospital of Mexico City will design, execute, and evaluate the clinical training program.
- The Secretariat of Health and the Headquarters of Coordinated State Services will organize, execute and evaluate the Subprogram in each state.
- AID/PRITECH will provide economic support and will participate with the General Office of Preventive Medicine and the Federico Gomez Children's Hospital of Mexico City in evaluating the Subprogram.
- PAHO will participate in planning, designing and executing the Subprogram and will provide economic support for the selection, support and followup visits of the participants.

4.3 Strategies for Executing the Clinical Training Subprogram

4.3.1 Selection of States

The following criteria will be taken into account in selecting the states that will participate:

- High rates of morbidity and mortality from diarrhea.
- Outlying states.
- High-risk states as detected by the National Survey of Morbidity and Mortality from Diarrhea.

The states selected and the training timetable are shown in Appendix 1.

4.3.2 Selection of Participants

The selection criteria are found in Appendix 1; the following guidelines will be followed in preselecting personnel for clinical training:

The same day that the Courses for Diarrhea Supervision Skills begin, visits will be made to hospitals and/or clinics or health centers for preselection of personnel to take their training in the Federico Gomez Children's Hospital. Simultaneously or independently, an interview will be held with the state secretary of health to inform him of the preselected personnel and make him more familiar with the program's obligations and any possible support it may require.

Training of the selected personnel will be carried out in the Oral Hydration Department of the Fernando Gomez Children's Hospital and will last one week, with three participants from each of two states (six in all).

Said personnel will agree to draw up a program for establishing a teaching unit for diarrhea and oral hydration therapy in their locale; this unit will operate as a clinical training center and will promote the creation of other units in the state, should health conditions require. The necessary support material will be provided for the performance of these functions.

- Once the agreement of the 19 states proposed to participate in this project has been obtained, written communication (SS/SSP) will be established by sending out the present document, so as to fully inform state heads of the subprogram and to allow for consultations regarding it.

4.4 Design of the Clinical Training Program

4.4.1 General

Training in management of oral hydration therapy will last one week (Monday through Friday) in the Oral Hydration Department of the Federico Gomez Children's Hospital; this will be accompanied by a remodeling of the area so as to adapt the space where the training will be held (board room), with a schedule of 8:00 am to 1:00 pm and 2:00 pm to 5:00 pm.

The training program will include the following units or topics:

- Physiopathology of diarrhea.
- Case management.
- Epidemiology of diarrhea.
- Prevention of diarrhea.
- Implementing and administering Oral Hydration Units.
- Records.
- Clinical evaluation.
- Administrative evaluation.

These topics or units will be carried out according to a schedule with the corresponding descriptive cards, schedules and timetables (Appendix 2).

The clinical training will be backed up with bibliography sessions, presentation of cases in discussion groups, and lectures. The bases for

implementing an Oral Hydration Unit in each of the participants' hospitals will also be discussed; the purpose of this will be to train at least 17 health workers in each state during the year, so that they can increase the number of units in other departments, as needed.

Training will take place in groups of six; that is, with personnel from two states at once, under the tutelage of the Oral Hydration Department staff. Each of the participants will receive support material, which will be utilized in training personnel in each state; this material will consist of:

- 10 articles on the topics covered by the program, both national and international;
- Teaching materials (a set of slides, graphics folder, handbook of standards, and handbook of organization and procedures for Oral Hydration Units;
- Bibliographic references on oral hydration therapy and diarrhea;
- A copy of the present guidebook.

During the course of this subprogram (six months) the trained personnel will undergo a supervisory visit to observe the results and provide advice and support of necessary.

These visits will be made by the staff of the General Office of Preventive Medicine and/or the Federico Gomez Children's Hospital, with the participation of PAHO and/or AID personnel.

These institutions will agree to support the creation and operation of the Oral Hydration Unit, which will serve to train state health personnel, and the creation of other Oral Hydration Units in accordance with the health conditions in the place of origin of the participants. Regional seminars will also be held to disseminate updated information regarding diarrheal diseases, management of children with diarrhea, and use of oral hydration therapy in states to be decided on cooperatively by the General Office of Preventive Medicine and the Federico Gomez Children's Hospital.

APPENDIX 1

REQUISITES FOR SELECTION OF STATE PERSONNEL

ONE PEDIATRICIAN:

Preferably chief of emergency or chief of teaching, with medical leadership and administrative authority to set up the Oral Hydration Unit within his hospital.

ONE NURSE:

With supervisory responsibility and technical and administrative leadership in the state, and personal motivation for the program. She must work with the doctor as a team.

ONE DOCTOR OR NURSE:

With state administrative responsibility for the Program for Prevention and Control of Diarrheal Diseases or Oral Hydration for Diarrhea at the state level.

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**WORKING AGENDA FOR THE CLINICAL TRAINING COURSE IN MANAGING THE CHILD
WITH DIARRHEA AND USE OF ORAL HYDRATION THERAPY**

SCHEDULE

Monday

8:00 - 10:00	Introduction, course objectives, activities to be carried out. Initial evaluation. Administrative information.	(T)
10:00 - 11:00	Tour of the department and introduction of the staff. Presentation of the written standards and procedures of the Oral Hydration Dept. of the Federico Gomez Children's Hospital.	(TP)
11:00 - 12:00	Physiopathological bases of acute diarrhea. Remarks.	(T)
12:00 - 1:00	Report on previous experiences of the participants in managing cases of acute diarrhea. (Group discussion) Remarks.	(TP)
1:00 - 2:00	Lunch.	
2:00 - 4:00	Principles of clinical management of acute diarrhea.	(T)
4:00 - 5:00	In-room review of clinical cases and presentation of bibliographic articles.	(TP)
5:00 - 5:30	Library.	(T)

Theory (T)	5.5 hours
Theory & practice (TP)	3 hours

	8.5 hours

Tuesday

8:00 - 9:00	Directed reading of bibliographic articles. Pathogenic agents in diarrhea.	(TP)
9:00 - 12:00	Case management. Clinical practice.	(P)
12:00 - 1:00	Review and supervision of clinical cases. (Supervised visit)	(TP)

1:00 - 2:00 Lunch.

2:00 - 4:00 Presentation of the educational program and the written educational program. (TP)
Group discussion.

4:00 - 5:00 Epidemiology of diarrhea. (T)
Lecture.

Theory (T)	1.0	hour
Clinical practice (P)	3	hours
Theory & practice (TP)	4	hours

	8.0	hours

Wednesday

8:00 - 9:00 Prevention of diarrhea. (T)
Lecture

9:00 - 12:00 Clinical practice. Case management. (P)

12:00 - 1:00 Presentation of cases. Group discussion. (TP)

1:00 - 2:00 Lunch

2:00 - 4:00 Necessity of changing routine practices. Strategy. Bibliographic references. (TP)
Group discussion.

4:00 - 5:00 Design of work plan to implement changes in your hospital to support creation of the OHU. Presentation of bibliographical material. (P)

5:00 - 5:30 Library.

Theory (T)	1.5	hours
Theory & practice (TP)	3	hours
Practice (P)	4	hours

	8.5	hours

Thursday

8:00 - 9:00 Bibliography session. (TP)

9:00 - 1:00 Management of clinical cases. (P)

1:00 - 2:00	Lunch.	
2:00 - 4:00	Presentation of the work plan and list of necessary changes in your hospital to set up the diarrhea training unit. Strategies to be followed.	(TP)
4:00 - 5:00	Discussion of work plans and forms of training presented.	(TP)
	Review of support needed for implementation.	

Theory & practice (TP)	4.0 hours
Clinical practice (P)	4.0 hours

	8.0 hours

Friday

8:00 - 9:00	Administrative management of the department.	(TP)
	Remarks on standards and procedures used and their replicatability.	
9:00 - 12:00	Clinical management of cases.	(P)
12:00 - 1:30	Visit to patients.	(TP)
1:30 - 3:30	Lunch.	
3:30 - 4:30	Presentation of final work program.	(TP)
4:30 - 5:00	Remarks. Form for suggestions and recommendations. Final evaluation.	(TP)

Clinical practice (P)	3.0 hours
Theory & practice (TP)	4.0 hours

	7.0 hours

Day Hours	Monday	Tuesday	Wednesday	Thursday	Friday	TOTAL
Theory (T)	5	1	1	-	-	7
Theory & Practice						
1) Clinical	2	2	1	1	1	7
2) Administ.	1	2	2	3	1	9
Practice						
1) Clinical	-	3	3	4	3	13
2) Administ.	-	-	1	-	2	3
Library*	.5	-	.5	-	-	1
TOTAL	8.5	8.0	8.5	8.0	7.0	40

*The hospital library remains open until 7:00 pm.

APPENDIX 3

DESCRIPTIVE CARDS

Objective No. 1: To provide the participants with the latest information to improve their understanding of the physiopathological process of diarrhea and its clinical management.

Day/Time: MONDAY Morning 8:00 - 9:00

Topic: I. Introduction; course objectives, activities to be carried out.

Objectives: 1. To orient the participants within the context of PRECED and the Oral Hydration Program.

2. To inform them of their responsibilities during the course and what they are expected to achieve during their training.

3. To provide them with the necessary administrative information.

Content: 1. Brief description of background to the Diarrhea Control and Oral Hydration Therapy Program.

2. Objectives of the course and participants' commitments during and after their training.

3. Travel, per diems, food, secretarial support, etc.

Methodology: Lecture.

Support

Material: Guidebook for the clinical training course in oral hydration therapy. Slides 1-5.

Bibliographic items 1-5.

In Charge: Dr. Felipe Montoya, Dr. Luis Velazquez, Dr. Martha Lopez de Montero, PAHO/AID

General Office of Preventive Medicine, SSA.

Topic: II. Initial evaluation.

Objectives: To understand the participants' position regarding oral hydration therapy.

Content: Written evaluation.

Support

Material: Questionnaire.

9:30 - 10:30

Topic: Information on Department of Oral Hydration.
Objectives: To orient the participants within the physical area of the Department of Oral Hydration.
Content: Brief explanation of the origin of the Dept. of Oral Hydration.
Methodology: Guided tour or visit.

Support Material: Presentation of written material. 1. Handbook of Standards and Procedures of the Oral Hydration Dept.

In Charge: Dr. Luis Velazquez Jones.

Topic: Introduction of the Oral Hydration Dept. staff.
Objectives: To orient the participants in relation to the human resources available in the department.

Content: Presentation and functions of each of the officials of the Oral Hydration Dept.

Methodology: Guided tour or visit.

Support Material: 2. Bibliographic items 4 and 5.

In Charge: Dr. Felipe Mota Hernandez; Dr. Luis Velazquez Jones.

10:30 - 12:00

Topic: Physiopathology of acute diarrhea.
Objectives: To provide participants with updated information on physiopathological mechanisms that give rise to diarrheal diseases.

Content: Review of normal intestinal absorption mechanisms; Carriers; Regulating interchange; Interference in normal process; Enterotoxigenic and enteroinvasive pathogenic agents.

Methodology: Lecture; Q&A.

Support Material: Article 6; slides 6-15.

In Charge: Dr. Jorge Olarte; Dr. Antonio Zamora; Dr. Jose Alberto Garcia Aranda; Dr. Felipe Mota Hernandez.

Objective No. 2: To develop and/or update skills in managing diarrhea cases.

12:00 - 1:00

Topic: Prior experience of participants in managing cases of acute diarrhea.

Objectives: To understand prior therapeutic experiences, skills and behaviors of the participants in relation to cases of acute diarrhea in children under five.

Content: Presentation of each participant's experiences (10 minutes).

Methodology: Group work with teacher; exposition, comments, questions.

In Charge: Dr. Felipe Mota Hernandez; Dr. Luis Velazquez Jones; Dr. Martha Lopez de Montero; PAHO/AID

1:00 - 2:00 LUNCH

Afternoon
2:00 - 4:00

Topic: Principles of clinical management of cases of acute diarrhea.

Objectives: To provide participants with elements to guide the clinical management of patients with diarrhea. (Diagnosis, evaluation, and treatment.)

Content: Question period. Clinical examination. Evaluation. Treatment. Followup. Management of department records.

Methodology: Lecture. Review and management of forms.

Support Material: Articles 7-20. Slides 16-36. Set of forms from the Oral Hydration Dept. of the Fed. Gomez Children's Hospital.

In Charge: Dr. Felipe Mota Hernandez; Dr. Luis Velazquez Jones; Dr. Maximiliano de Leon; Dr. Jaime Palacios Trevino.

4:00 - 5:00

Topic: Review of clinical cases in the dept.

Objectives: To begin case management and see its evolution through review of the day's clinical histories and cases.

Content: Comparison of parameters established theoretically with the actual cases.

Methodology: Supervised review of selected clinical histories and cases.

Support Material: Clinical history.

In Charge: Dr. Felipe Mota Hernandez.

TUESDAY Morning 8:00 - 9:00

Topic: Review of bibliographic item 21.
Objectives: To stimulate discussion and resolve any doubts on effectiveness of oral hydration therapy.
Content: "Treatment of acute diarrhea in children: a historical and physiological perspective." Dr. Norbert Hirshorn.

Methodology: Reading and discussion.

Support Material: Article 21.

In Charge: Dr. Luis Velazquez Jones; Dr. Felipe Mota Hernandez; Dr. Maximiliano de Leon.

9:00 - 12:00

Topic: Management of clinical cases.

Objectives: To acquire skills in diagnosis and treatment of children with diarrhea through use of oral hydration therapy.

Content: Clinical cases.

Methodology: Clinical work with instructor.

Support Material: Handbook of Procedures of the Oral Hydration Dept. and Technical Standard of the Official Journal, Art. 18.

In Charge: Dr. Felipe Mota Hernandez; Dr. Luis Velazquez Jones; Nurse Maria de los Angeles Villegas V.

12:00 - 1:00

Topic: Presentation of cases.

Objectives: To demonstrate theoretical knowledge providing a basis for therapeutic behavior.

Content: Clinical cases.

Methodology: Clinical section and discussion.

Support Material: Clinical histories and Dept. Handbook of Standards and Procedures.

In Charge: Dr. Luis Velazquez Jones; Dr. Felipe Mota Hernandez; Dr. Martha Lopez de Montero; Nurse M. de Los Angeles Villegas V.

1:00 - 2:00 LUNCH

Afternoon - 2:00 - 4:00

Topic: Presentation of the educational program.

Objectives: To emphasize the importance of education as an essential component in managing the child with diarrhea.

Content: Educational program of the Oral Hydration Dept., educational content, evaluation guides.

Methodology: Group discussion.

Support Material: Written educational program. Graphics folder. Videotapes of theatrical works. Medical academy.

In Charge: Mrs. Silvia Leyva; Nurse M. de los Angeles Villegas V.

4:00 - 5:00

Topic: Epidemiology of diarrhea.

Objectives: To understand factors that promote the appearance of diarrheal diseases relating both to the host and the environment.

Content: Etiology of diarrhea; epidemiology; agents; incidence; prevalence; mortality rates and reason for diarrhea.

Methodology: Lecture.

Support Material: Articles 6 and 22. Preliminary results of the survey on morbidity and mortality and oral hydration therapy in Mexico. Slides 37-49.

In Charge: Dr. Jorge Fernandez de Castro; Dr. Dionisio Aceves; Dr. Felipe de Jesus Garcia Pedroza; Dr. Jaime Sepulveda.

WEDNESDAY Morning 8:00 - 9:00

Topic: Prevention of diarrhea.

Objectives: To inform and motivate participants in adopting those procedures making it possible to reduce diarrhea morbidity in children under five.

Content: Analysis of possible preventive measures and the value of various approaches.

Methodology: Lecture.

Support Material: Article 23; Slide 50.

In Charge: SSA General Office of Preventive Medicine.

9:00 - 12:00

Topic: 1. Case management. 2. Educational component.

Objectives: Use of oral hydration therapy. To acquire skill in communicating with mothers and skill in evaluating and treating the child with diarrhea.

Content: Clinical cases.

Methodology: Care of children under supervision and chat with mothers.

Support Material: Clinical practice; educational talk.

In Charge: Dr. Luis Velazquez Jones; Dr. Martha Lopez de Montero; Mrs. Silvia Leyva.

12:00 - 1:00

Topic: Presentation of clinical cases.

Objectives: To acquire confidence in oral hydration therapy.

Content: Clinical cases or clinical histories.

Methodology: Guided discussion.

In Charge: Dr. Felipe Mota Hernandez; Dr. Luis Velazquez Jones.

Objective No. 3: To train participants in how to establish a teaching Oral Hydration Unit in their home hospital.

WEDNESDAY Afternoon 2:00 - 4:00

Topic: Necessity of changing routine practices. Strategy to be used.

Objectives: To motivate participants sufficiently to change the present practices.

Content: Explanation of why changes are important; list for participants types of resistance and difficulties to be overcome, benefits to be obtained with changes. Discuss possible strategies to be able to overcome difficulties and achieve changes.

Methodology: Group discussion. Q&A. Written lists.

Support Material: Dept. of Oral Hydration Handbook of Standards and Procedures.

In Charge: Dr. Martha Lopez de Montero; Dr. Gonzalo Gutierrez Trujillo; Dr. Jaime Palacios Trevino; Nurse M. de los Angeles Villegas V.

Topic: To observe and note the characteristics of the Oral Hydration Dept. of the Federico Gomez Children's Hospital.

Objectives: To analyze whether it is feasible to reproduce an oral hydration dept. with similar characteristics.

Content: List of characteristics or changes that would be necessary in the home hospital.

Methodology: Observation; Q&A.

Support

Material: Dept. Handbook of Standards and Procedures.

Afternoon 4:00 - 5:00

Topic: Work plan for setting up an oral hydration dept. in the home hospital.

Objectives: To produce a document that will help participants in their work at the state level and to achieve a commitment for creation of an oral hydration dept.

Content: To design a work plan with: 1) Objectives of the oral hydration unit; 2) Strategies to be used; 3) Activities; 4) Timetable.

Methodology: Written work.

In Charge: Dr. Martha Lopez de Montero

Topic: Presentation of bibliographic items.

Objectives: To obtain information on specific topics.

Methodology: Reading.

Support

Material: Presentation of articles 24 and 25.

In Charge: Dr. Martha Lopez de Montero.

5:00 on: LIBRARY

Objective No. 4: To train subordinate staff in managing the child with diarrhea and managing other oral hydration units as needed.

THURSDAY Morning 8:00 - 9:00

Topic: Approaches for reducing morbidity-mortality from diarrheal diseases.

Objectives: To be familiar with available approaches and the feasibility of applying them.

Content: Articles 24-25.

Methodology: Bibliography session.

Support Material: Articles 24 and 25.

In Charge: Dr. Martha Lopex de Montero; Dr. Luis Velazquez Jones.
9:00 - 1:00

Topic: Management of clinical cases.

Objectives: To acquire skills in diagnosis, treatment, and prognosis of cases of acute diarrhea.

Content: Clinical cases.

Methodology: Management of cases in the Dept. of Oral Hydration.

In Charge: Dr. Felipe Mota Hernandez; Dr. Luis Velazquez Jones.
1:00 - 2:00 LUNCH
Afternoon 2:00 - 4:00

Topic: Work plan and list of changes necessary to establish the oral hydration dept.

Objectives: To propose and discuss the feasibility of making the changes and strategies to be implemented.

Content: Work plan for each state.

Methodology: Group discussion.

Support Material: Blackboard and chalk.

In Charge: Dr. Martha Lopez de Montero; Dr. Maximiliano de Leon; Dr. Jaime Palacios Trevino; SSA General Office of Preventive Medicine.
THURSDAY Afternoon 4:00 - 5:00

Topic: Training program.

Objectives: To discuss strategies and approaches to adapt them to the state hospital situation.

Content: Training program for each state.

Methodology: Group discussion.

Support Material: Guidebook; agenda; descriptive cards; blackboard and chalk.

In Charge: Dr. Martha Lopez de Montero; Dr. Felipe Mota Hernandez.
FRIDAY Morning 8:00 - 9:00

Topic: Administrative management of the Oral Hydration Dept.

Objectives: To understand the operation and administrative standards governing the Oral Hydration Dept.

Content: Administrative standards and procedures.

Methodology: Demonstration. Q&A.

Support Material: Handbook.

In Charge: Nurse M. de los Angeles Villegas V.; Dr. Luis Velazquez Jones.
10:00 - 12:00

Topic: Clinical management of cases.

Objectives: To demonstrate skill in managing children with diarrhea using oral hydration therapy, stressing the food component.

Content: Review of all components of oral hydration therapy, emphasizing the importance of feeding.

Methodology: Clinical practice; nutritional evaluation of patients.

Support Material: Patients in the Oral Hydration Dept.

In Charge: Dr. Felipe Mota Hernandez; Dr. Luis Velazquez Jones.
12:00 - 1:30

Topic: Visit to patients.

Objectives: To reinforce the knowledge and skills acquired during the training; to clear up doubts.

Content: Review of patients and/or the day's clinical histories.

Methodology: Presentation. Guided group discussion.

Support Material: Hospitalized patients and/or clinical histories.

In Charge: Dr. Felipe Mota Hernandez; Dr. Luis Velazquez Jones.
Afternoon. 1:30 - 3:30 LUNCH

3:30 - 4:30

Topic: Presentation of the definitive state work programs.

Objectives: To exchange opinions and experiences among the participants regarding their commitment.

Content: Work plans.

Methodology: Guided group discussion.

Support Material: Work plans.

In Charge: Dr. Felipe Mota Hernandez; Dr. Martha Lopez de Montero; SSA General Office of Preventive Medicine.

4:30 - 5:00

Topic: Comments on the course. Turning in the suggestions and recommendations form.

Objectives: To take suggestions and recommendations from participants in order to improve the course, both in content and in teaching methods. To evaluate well how the objectives set were achieved.

Content: Group discussion. Participants' recommendations.

Methodology: Group discussion. Course evaluation.

Support Material: Written comments.

In Charge: Dr. Felipe Mota Hernandez; Dr. Martha Lopez de Montero; SSS General office of Preventive Medicine.

Topic: Final evaluation.

Objectives: To understand the results of the course in relation to changes in knowledge, activities and practices.

Content: Content of the evaluation.

Methodology: Administering the final evaluation questionnaire.

Support Material: Initial and final evaluation questionnaire.

TURNING IN SUPPORT MATERIAL (Articles, slides, bibliography, attendance certificate)

APPENDIX 4

SUBPROGRAM FOR CLINICAL TRAINING IN OHT

BIBLIOGRAPHIC ARTICLES

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**SECRETARIAT OF HEALTH
NATIONAL PROGRAM OF ORAL REHYDRATION IN DIARRHEA
UNITED NATIONS FUND FOR INFANCY**

DEPARTMENT OF ORAL HYDRATION

HANDBOOK OF OPERATING PROCEDURES

MEXICO CITY 1986

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 TO F. GOMEZ

FORMS

INTRODUCTION

Acute diarrheal diseases are the result of multiple causes, primarily of an infectious nature; they are self-limiting and are generally acquired orally. They are characterized by more frequent and looser bowel movements. Acute diarrheal diseases may occur at any age, but they are more frequent and become more serious in children under five years of age. The most common complication and the leading cause of death is dehydration.

In order to avoid or correct dehydration, the most appropriate, simple and accessible treatment is oral hydration therapy (OHT).

OHT should be employed both in medical care centers and in homes; its advantages in cost and availability of equipment are obvious.

This handbook sets forth the medical, nursing and educational activities that go into the operation of an OHT unit or department in medical care centers at all levels.

Its structure is designed to facilitate the performance of these activities and to allow it to be modified according to each unit's needs and characteristics.

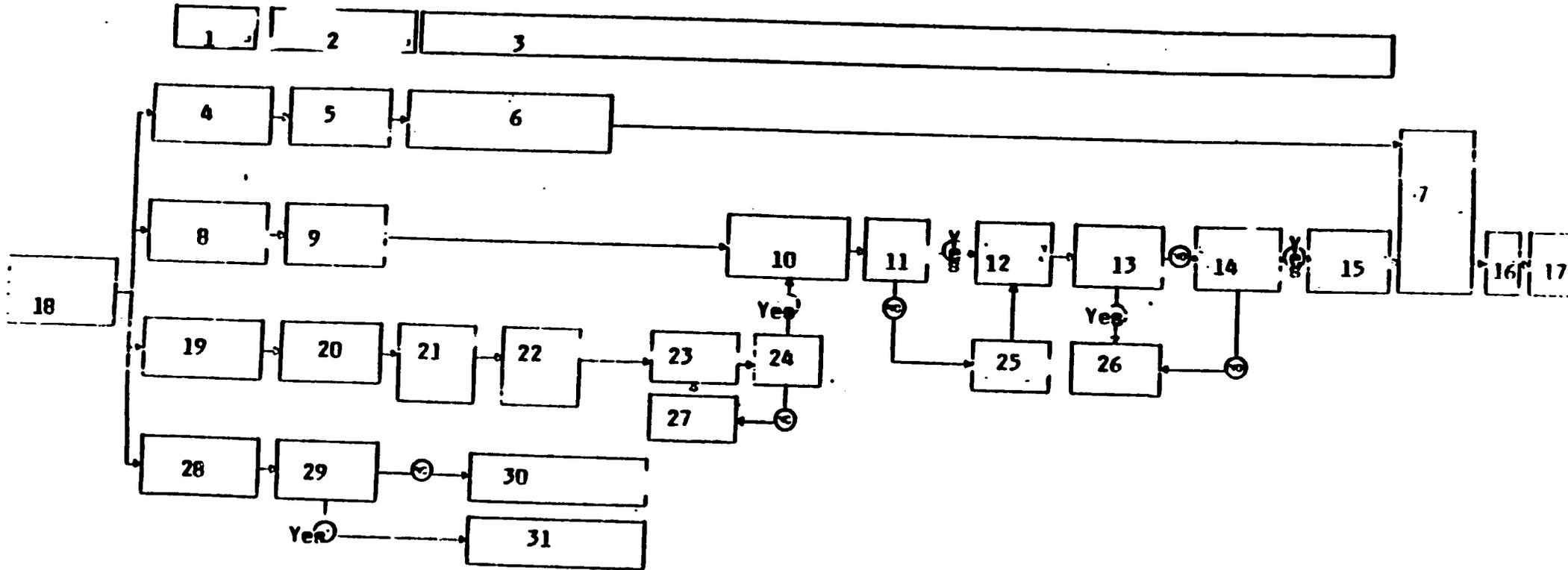
It is hoped that this handbook will be widely disseminated and that it will serve as a useful reference for the operation of the OHT units that will be established throughout the country.

ORAL HYDRATION DEPARTMENT

FLOWCHART

SERVICIO DE HIDRATACION ORAL

FLUJOGRAMA



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KEY TO FLOWCHART

1. Complete appraisal by physician.
2. Decision on therapy and any lab tests.
3. Treatment and individual education.
4. Not dehydrated.
5. Plan A - OHT at home.
6. Increase liquids, continue normal feeding, watch for signs of dehydration.
7. Educational appraisal; turning over envelopes and educational material.
8. Some degree of dehydration.
9. Plan B: OHT in the department.
10. OHT: 100 ml/kg/3-4 hours; maintain nursing.
11. Tolerates oral administration.
12. Appraisal every hour.
13. Any complications?
14. Dehydration corrected, low rate of diarrhea.
15. Continue normal feeding and Plan A.
16. Discharge.
17. Followup.
18. Child with diarrhea as main problem goes on to Oral Hydration Department.
19. Serious dehydration.
20. Plan C: IV hydration.
21. Saline solution or Ringer lactate: 30 ml/kg in 60 minutes.
22. Saline solution or Ringer lactate: 30 ml/kg over the next two hours.
23. Appraisal after three hours.
24. Tolerates oral administration.
25. Gastrocleisis: 15-30 ml/kg/hr.
26. Individual appraisal.
27. Continue IV hydration.
28. Other associated pathologies.
29. Emergency?
30. Care at appropriate level according to case.
31. Send to nearest emergency department.

OPERATING PROCEDURES FOR ORAL HYDRATION DEPARTMENTS OR UNITS

Health-care staff -- doctors, nurses, educators and other personnel -- must provide mothers with incentives throughout their stay at the department so that educational and care activities are well received and accepted; they should demonstrate that they are available to help them and listen to them in their current situation.

RECEPTION

Nurse

1. Receives the child and registers it (Form OHT 2).
2. Measures the brachial perimeter (Appendix), weight and temperature (Form OHT 2).
3. Takes the child to the department physician to evaluate the child and draw up the Oral Hydration Department clinical history (Form OHT 2).

Clinical evaluation in the OH Department

Physician

1. The physician rules out the presence of pathological processes associated with diarrhea and completes the history and the clinical evaluation (Form OHT 2).

Should he detect the presence of signs and symptoms unrelated to the diarrheal disease, he shall make the following decisions:

- a) If he diagnoses a syndrome or nosological entity of an EMERGENCY nature (when it is not the result of the dehydrated state), he sends the patient directly to the nearest emergency service.
- b) If he suspects a non-emergency syndrome or nosological entity, he proceeds with the OHT and requests clinical or laboratory tests to confirm his diagnostic hypothesis and indicates, according to his judgment, the appropriate treatment, based on his clinical diagnosis and while awaiting the results of the complementary tests.

If warranted, he considers sending the patient to the appropriate level.

2. In all other cases, he will evaluate the degree of dehydration and decide on the plan of treatment to be followed as indicated in the diagrams (Plan A, B, or C).
3. He shall prescribe etiological treatment only when necessary, when hydration is completed (Diagram 5).

DIAGRAM No. 1

THERAPEUTIC EVALUATION AND INDICATIONS*

[*WHO: Treatment and Prevention of Acute Diarrhea. Guidelines for Health Agent Instructors. WHO, Geneva 1985 (Modified)]

	A	B	C
1. ASK:			
DIARRHEA	Less than 4 liquid movements daily	From 4 to 10	More than 10
VOMITING	None	Little: less than 5/24 h	Frequent: 5 or more/24 h
THIRST	Normal	More than normal	Unable to drink
URINE	Normal	Little, dark	None for 6 hrs or more
2. OBSERVE:			
GENERAL CONDITION	Good, alert	Unwell, sleepy or irritable	Very sleepy, unconscious, hypnotic, or convulsions
TEARS	Present	Absent	Absent
EYES	Normal	Sunken	Very sunken, dry
MOUTH & TONGUE	Moist	Dry	Very dry
RESPIRATION	Normal	More rapid than normal	Very rapid and deep
3. EXAMINE:			
SKIN	Fold recovers quickly	Fold recovers slowly (2 secs +)	Fold recovers very slowly (2 secs +)
PULSE	Normal	Rapid	Rapid, weak, or not felt
FONTANEL (in nursing child)	Normal	Sunken	Very sunken
4. DECIDE:			
	Patient has no signs of dehydration	If patient has 2 or more signs, has definite dehydration.	If patient has 2 or more of these danger signs, has serious dehydration.
	Apply Plan A	Apply Plan B	Apply Plan C

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DIAGRAM No. 2

Patients not dehydrated:

- Will be included in Therapy Plan A (see Flowchart)

TREATMENT PLAN A*

[*WHO - Treatment and Prevention of Acute Diarrhea. Guidelines for Health Agent Instructors. WHO, Geneva, 1985 (Modified)]

How to treat diarrhea at home will be explained to the mother; she will be given the following three indications (the three rules):

1. Give the child more liquids than usual, such as:
 - a. Water and rice porridge, corn porridge, fruit juice, coconut milk, tea or other light infusions, and Oral Serum (1/2 to 1 cup after each bowel movement)
 - b. Mother's milk, cow's milk diluted 50% with water, or cow's milk in small quantities but more frequently.
2. Feed the child:
 - . As much as the child wants.
 - . Five to seven times a day.
 - . Easily digested foods: cooked rice, broth, bread, eggs, fish, and well-cooked meat.
 - . Foods containing potassium: pineapple, plantain, oranges, lemon, tomato.
3. Look for signs of dehydration:
You must show the mother how to ask, observe and feel the signs. Then tell her that you will demonstrate how to do it.

SHE WILL BE TOLD TO BRING THE CHILD BACK IF:

- . She observes any sign of the signs of dehydration.
- . The child continues to have diarrhea or fever for two or three more days.

THE MOTHER WILL BE TOLD THESE RULES ARE IMPORTANT. IT WILL BE EXPLAINED THAT SHE CAN PREVENT DIARRHEA IF:

- . She gives her child cool, clean, well-cooked foods and clean water to drink.
- . She observes good hygiene, especially when preparing food, and she cares for the child. Special emphasis on washing hands.

THE MOTHER WILL BE SHOWN HOW TO PREPARE ORAL SERUM AT HOME.

THE MOTHER WILL BE TOLD THAT AFTER EACH LOOSE (OR LIQUID) MOVEMENT SHE MUST GIVE THE CHILD:

- . 1/2 cup (50 to 100 ml) of oral serum if the child is under 1 year old.

- . 1 cup (100 to 200 ml) for children over age 1.
- . If the child vomits, tell her to wait 10 minutes and then continue giving small amounts of oral serum.
- . Always recommend that the serum be administered little by little with a small spoon.

Dehydrated patients:

- Will be included in Therapy Plan B (see Flowchart)

TREATMENT PLAN B*
(To correct dehydration)

[*WHO - Treatment and Prevention of Acute Diarrhea. Guidelines for Health Agent Instructors. WHO, Geneva, 1985 (Modified)]

- Will receive oral serum on demand. Generally the child should take from 50 to 100 ml/kg of weight in the first four hours.
- When weight has been determined, the following table may be used to calculate the volume.
- If it is not possible to weigh the patient, the weight-age chart will be used to estimate the weight (attached).

VOLUME OF ORAL SERUM RECOMMENDED FOR HYDRATION ACCORDING TO WEIGHT OF CHILDREN UNDER AGE FIVE

Weight (kg)	Volume (ml)	Weight (kg)	Volume (ml)
2	100-200	9	450-900
3	150-300	10	500-1000
4	200-400	11	550-1100
5	250-500	12	600-1200
6	300-600	13	650-1300
7	350-700	14	700-1400
8	400-800	15	750-1500

FOR CHILDREN OVER AGE FIVE

Weight (kg)	Volume (ml)	Weight (kg)	Volume (ml)
15	750-1500	25	1250-2500
16	800-1600	30	1500-3000
17	850-1700	35	1750-3500
18	900-1800	40	2000-4000
19	950-1900	45	2250-4500
20	1000-2000	50	2500-5000

The volume must be administered by the mother or family member in charge in

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partial doses every 20-30 minutes, a little at a time, with a cup or teaspoon over the 3- to 4-hour hydration period, watching for any changes each hour. If the patient wants more oral serum, it will be given.

If the patient's eyelids become puffed, administration of the oral serum will be suspended, and the patient will be given other liquids (water, tea or other light infusions, rice water and mother's milk or cow's milk diluted 50% with water). When the swelling of the eyelids disappears, if the patient is still dehydrated administration of the oral serum will be resumed.

Should the patient vomit during treatment, the oral serum will be suspended for 10 minutes; then small quantities of oral serum will continue to be given at short intervals. If the child tolerates the solution and does not vomit again for 20 minutes, administration of the serum will be resumed at the previous rate.

Those patients who do not accept or tolerate oral administration, who vomit copiously more than three times, who have abdominal distension or a high rate of watery diarrhea (more than 10 ml/kg/hr) will be administered the solution via gastrocleisis [?] at a dosage of 15-30 ml/kg of weight per hour.

Once the dehydration is corrected, if the patient continues with a high rate of diarrhea (more than 2 episodes/hour and/or more than 10 ml/kg/hour), he will remain in the OH department or will be hospitalized.

If the diarrhea rate is low, the patient will be discharged.

DIAGRAM No. 4

Patients with serious dehydration:

- Will be included in Therapy Plan C (see Flowchart)

TREATMENT PLAN C*
(To correct serious dehydration)

[*WHO- Treatment and Prevention of Acute Diarrhea. Guidelines for Health Agent Instructors. WHO, Geneva, 1985 (Modified)]

- IV hydration will be started immediately according to the diagram¹.

AGE GROUP	SERUM TYPE	QUANTITY OF LIQUID (PER KG OF BODY WEIGHT)	ADMINISTRATION TIME
Children under 12 mos.	Isotonic saline sol. (0.9%) or Ringer IV Lactate	30 ml/kg	Over a 1-hour period
		Followed by	
	Isotonic saline sol. (0.9%) or Ringer IV Lactate	40 ml/kg/hr	Within next 2 hrs
		Followed by	
	Oral serum	40 ml/kg	Within next 3 hrs
Older children and adults	Isotonic saline sol. (0.9%) or Ringer IV Lactate	100ml/kg	Over 4-hour period; as fast as possible at first until radi- al pulse is easily felt.

¹ The volumes of liquid and speeds of administering the treatment are averages based on ordinary needs. These quantities should be increased if they are insufficient to achieve hydration, or reduced if hydration is achieved sooner than expected or if the appearance of swelling around the eyes indicates superhydration. Once the health worker has acquired some experience in hydration therapy, it may not be necessary to follow this diagram exactly.

DIAGRAM No. 5

TREATMENT COMPLEMENTARY TO ORAL HYDRATION
(For use by the physician)*

[*WHO/CDD/SER/80.2 REV 1 (1984) (Modified)]

IMPORTANT:

Antimicrobials will be used only when:

- a) There is clinical evidence of invasive diarrhea (blood or mucous in the stool and high fever).
- b) Laboratory results indicate the need for specific antimicrobial treatment.

Preparations containing kaolin, pectin and other absorbents are unnecessary, and their efficacy has not been proved.

Opiates and their derivatives (tincture of opium, codeine, diphenoxylate-atropine, pipenzolate, loperamide) are NOT to be administered to children. By reducing peristalsis, they delay the elimination of the causative organisms. These medications depress respiration and can be fatal, especially in nursing infants.

ANTIMICROBIALS USED IN TREATING SPECIFIC CASES OF ACUTE DIARRHEA

CLINICAL DIAGNOSIS OF THE CAUSE	DRUG OF CHOICE (1)	OPTION (1)
Suspicion of dysentery by Shigella (2) (3)	AMPICILLIN 100 mg/kg/day divided into 4 daily doses for 5 days	TRIMETHOPRIM (TMP) SULFAMETHOXAZOL (SMX) Children: TMP 10 mg/kg/day in 2 daily doses for 5 days Adults: TMP 160 mg & SMX 800 mg twice a day for 5 days.
Acute intestinal amoebiasis	METRONIDAZOL (4) Children: 30 mg/kg/day for 5-10 days. Adults: 750 mg 3 times a day for 5-10 days. Associated with: Dihydroxyquinolein. 30 mg/kg/day for 10 days.	In severe cases: DIHYDROEMETHINE CHLORHYDRATE. By deep intramuscular injection, 1 mg/kg (60 mg max.) for periods up to 5 days, depending on reaction (all ages).
Acute Giardiasis	METRONIDAZOL (4)	Furazolidone

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Children: 15 mg/kg/day
for 5 days.

Children: 5 mg/kg/day
in 4 daily doses for 3 days

Adults: 250 mg 3 times
a day.

- (1) All doses indicated are for oral administration unless otherwise specified.
- (2) In deciding on selection of antibiotics for treatment, local frequency of germs resistant to antibiotics should also be kept in mind.
- (3) Therapy with antibiotics is especially needed in the case of children under two years of age with persistent high fever.
- (4) Tinidazol and Ornidazol may also be used.

DIAGRAM No. 6

LIMITS OF ORAL HYDRATION

- **State of shock**
- **Abdominal complications**
- **Altered state of consciousness**
- **Lack of acceptance (gastrocleisis)**
- **Incoercible vomiting**

CHECK OF CLINICAL PROGRESS

Nurse, Physician

1. The nurse receives the child with instructions from the physician and carries them out. In the case of Plan A, go on to educational activities; for Plan B:
2. Assigns the child and the person accompanying it to a place, seat or module, if the department is designed in that way, and instructs the mother to start treatment with oral serum.
3. The physician and nurse will watch over the patient's progress during oral hydration treatment in the department. Evaluation of the patient is done every hour, and this is noted on the clinical progress check sheet (Form OHT 2).
4. Should the case require it, the physician calls for a change in treatment plan, to Plan A or Plan C.
5. For those children staying on in the department, Plan B, while the mother (or person accompanying the child) administers the oral serum to the child, the nurse or educator does the educational interview, taking into account the answers given to initiate individual instruction. The use of a notebook (logbook) to record educational activities is suggested, to be designed by the staff according to the department's needs.

EDUCATIONAL ACTIVITIES

Physician, Nurse, or Educator (if available)

General recommendations

Remember that the information provided to the mother must always be the same, regardless of who is giving it. Unify your criteria through continuous teamwork.

Attitude towards mothers:

1. Respect the person and her ideas.
2. Be cordial in your demeanor.
3. Recommend, don't blame.
4. Project the trust that will enable mothers to ask about what they don't understand and to discuss their health problems; to this end, allow the woman to speak, so as to understand her manner of speaking and be able to communicate in the same terms and to know what she understands when she arrives at the department.
5. Be aware that lack of hygiene and inadequate nutrition have more to do with living conditions than with simple negligence.

6. Consider that the emotional state in which the mother arrives, given her child's illness, may be an obstacle to learning.
7. Try to be patient and repeat the instructions.
8. Ask the mother to explain the recommendations so that you can evaluate how well she understands.
9. Stress the importance of her active participation in her child's treatment because of the care and affection with which she gives it.

STEPS IN INDIVIDUAL INSTRUCTION

Objectives

- a) That mothers learn through practice how to prepare and properly administer the oral hydration therapy.
 - b) That they take hygiene measures with regard to their own person, food preparation, and the proper use of water and its importance in preventing disease.
 - c) That they serve as propagators of oral hydration therapy and the knowledge they acquired in the department.
1. Observing the arrival and reception of the patient and the person accompanying him so as to understand the process and the emotional state of the companion (generally the mother) and to evaluate the most appropriate moment to start the educational program.
 2. Greeting and introduction.

Ask the child's name, in order to be able to always call the patient by name. Ask about the patient's health.
 3. Relate what she says to dehydration, and tell her what the signs are.

Ask the woman to point out and review the signs of dehydration in her child.
 4. Ask about how diarrhea is treated at home.

Based on her responses, introduce the concepts of Plan A (for preventing dehydration): increase liquids, observe signs of dehydration, continue nursing/feeding.

Go over what the mother is using as treatment, stressing what is correct and what feeding should consist of during the diarrheal period.
 5. Explain what oral serum is and what it is for, and how to prepare it. Accompany the woman to the demonstration area so she can prepare the oral serum herself. Show her a diagram or other available graphic material, underscoring the importance of clean water, clean vessels, and clean hands, how to measure a liter exactly, and how to administer it.

Point out the advantages of using cup and spoon to administer it.

Explain that the taste is what the serum should taste like. The amounts must be precise. NOTHING else should be added, since it may harm the child instead of helping.

Ask some questions about the points you may think need reinforcing.

Ask the woman to repeat, step by step, the preparation of the serum.

6. Ask what she thinks can be done to keep her children from getting diarrhea.

Find out and analyze with her the environmental factors of her surroundings.

Help her to find feasible means of improving their health conditions (protecting water and food, hand washing, alternative foods, etc.).

Ask if she has any doubts. Offer assistance in clearing them up.

7. Tell her you're going to ask her some questions (Form OHT 3).

This material is designed to be utilized by the health team in order to periodically evaluate the educational work.

At the end of the evaluation note her complete name and address.

8. Ask her to cooperate in teaching another woman what she has learned, and to get the second woman to do the same with another.

Talk to her about a possible housecall to see whether she has forgotten how to prepare the oral serum and whether there have been other cases of diarrhea in her family and how they were treated.

9. Send-off and turning over of any available educational material.

If it is desired to carry out parallel group educational activities, consult the guidebook and attached considerations.

DISCHARGE PROCEDURE

When discharging the patient, the physician:

1. Evaluates for the last time the general clinical condition and assures himself that the child is well hydrated and that the diarrhea is no longer serious.
2. Based on the results of any lab exams, completes his clinical diagnosis and prescribes the appropriate treatment.
3. With the mother and nurse, weighs the child and categorizes him according to his nutritional condition, noting the weight on the growth chart

(attached) that he will turn over to the mother. The nurse will explain to the mother the importance of watching over the growth and development of her child.

4. Gives the mother instructions on how to feed her child and the necessity of improving his nutritional condition (Diagram No. 7).
5. Recommends to the mother maintenance oral hydration, following Plan A.
6. Recommends to the mother that she return to the oral hydration department if the child again shows any signs of dehydration.
7. Signs the discharge form.

When discharging the patient, the nurse:

8. Encourages the mother to ask about any doubts she may have.
9. Tries to resolve them.
10. Completes the registration data (Form OHT 1).
11. On the first of the month, fills out Form OHT 4, the condensed monthly report.

DIAGRAM No. 7

INSTRUCTIONS FOR FEEDING THE CHILD

THE MOTHER WILL BE GIVEN THE FOLLOWING INSTRUCTIONS:

1. Give the child only mother's milk, whenever he wants it, up to the age of four months.
2. At four months, begin giving him other foods little by little (weaning).
3. At one year, the child should be eating everything, and several times a day (at least five).
4. Continue giving him the breast, whenever you and the child wish, for at least one year.

IF THE CHILD IS UNDERNOURISHED, THE FOLLOWING WILL BE RECOMMENDED:

1. Feed the child more frequently.
2. Add a teaspoonful of cooking oil to his meals.
3. Give the child all types of food.

A P P E N D I C E S

GROUP INSTRUCTION

This activity is a complement to the department's work and can be carried out concurrently in waiting rooms or any other suitable, available area. To carry out this activity, it should be considered whether the time and physical conditions of the room are favorable for the group.

See that:

- the children have already been clinically evaluated (if the activity is carried out in the department);
 - the mothers are not anxious;
 - complete equipment is available for the demonstrations.
1. Greeting and introduction of people and the activity.
 2. Invitation to gather around the demonstration area.
 3. Stimulate dialogue by asking about the treatment for diarrhea used at home, but letting participation be voluntary (encourage, don't force).
 4. Put the emphasis on increasing liquids, starting from what the mothers have said.
 5. Explain what dehydration is and what its risks are.
 6. Show and describe the materials necessary for preparing the serum, clearly and repetitiously.
 7. Ask the mothers to cooperate in preparing the serum.
 8. Ask those not participating in preparing the serum to explain the steps in the preparation.
 9. Ask the mothers to taste the serum, describe the characteristic taste, and recommend that no extra ingredients be added.
 10. Explain how to administer the solution, stressing the use of cup and teaspoon.
 11. Ask if there are any questions. Answer them.
 12. Ask questions about the recipe and how to administer the solution.
 13. Explain the serum's importance in preventing and treating dehydration, and its advantages.
 14. Give each woman any available graphic material.
 15. Ask each mother make a commitment to teach what she has learned to another, and invite those who may be interested to work in cooperation as promoters of OMT.

16. Send-off and offer of guidance.
17. Return the equipment to its place.

BASIC EQUIPMENT FOR OPERATING THE ORAL HYDRATION DEPARTMENT*

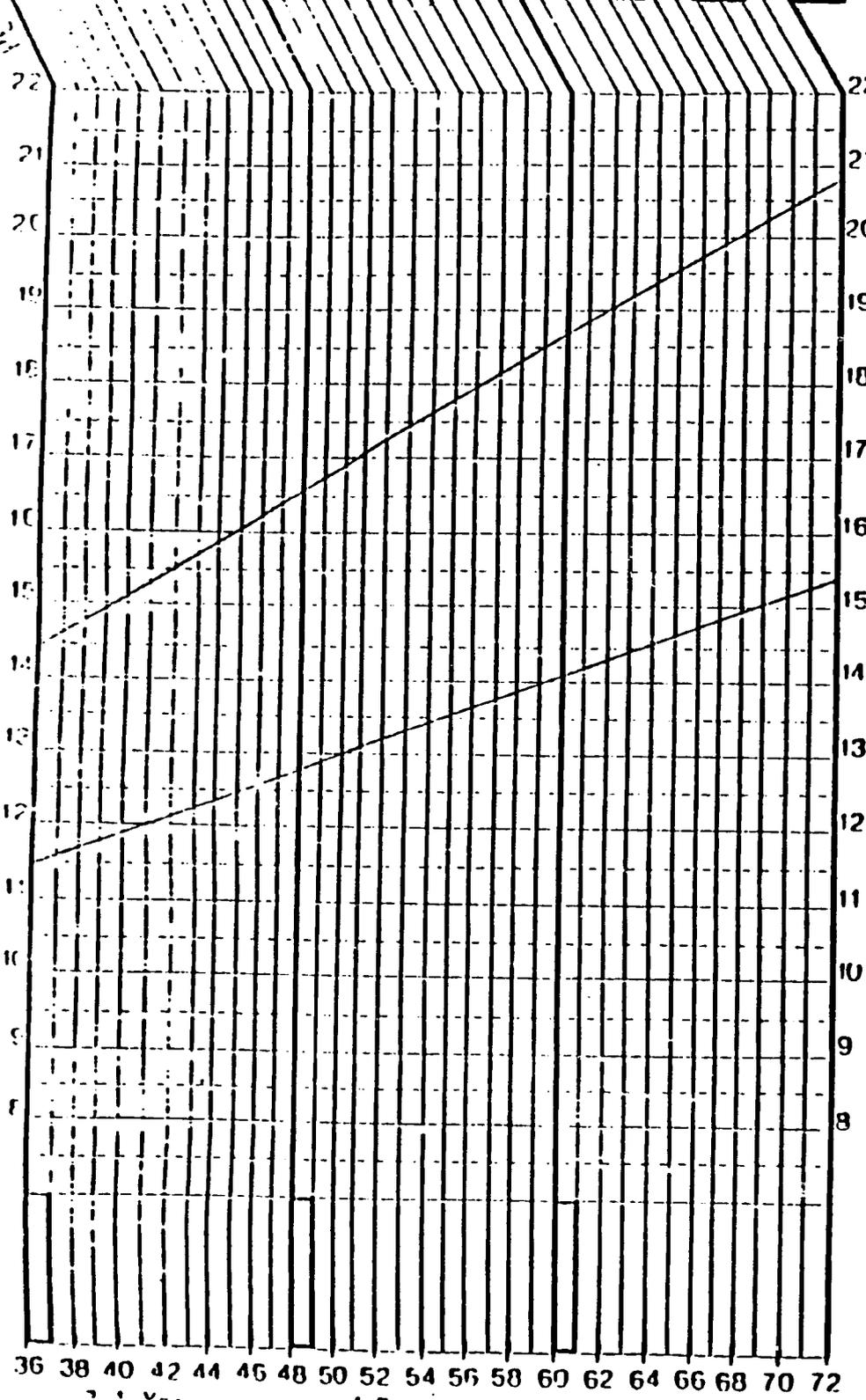
*The quantities given here are approximately those needed in a department that works on three shifts and treats a maximum of five patients at a time. They will have to be adapted to different requirements.

Special foods (materials for the nutrition experiment).

Adhesive tape.

- 100 Oral serum (envelopes) (minimum order: 50)
- 10 Nasogastric probes (minimum order: 3)
- 1 Tripod (minimum order: 1)
- 10 Infusers for use with gastrocleisis (minimum order: 5)
- 10 1 liter flasks (minimum order: 5)
- 2 Linen tapes to hold the probe (minimum order: 1)
- 24 Disposable 20 ml syringes (minimum order: 5)
- 10 Plastic kidneys (minimum order: 6)
- Whole or "humanized" milk
- 500 Diapers (minimum order: 150)
- 50 Sheets for the modules (minimum order: 25)
- 10 Thermometers
- 2 Kg powdered soap for cleaning the equipment
- 20 Bars of hand soap (minimum order: 7)
- 2 Scissors (minimum order: 1)
- 5 Trash containers (minimum order: 4)
- 2 Hampers for garbage and diapers
- 10 Graduated 1-liter pitchers (minimum order: 6)
- 10 Cups (minimum order: 6)
- 20 Teaspoons (minimum order: 10)

Factors Requiring Special Attention



- ① Birth Wgt under 2500 g
- ② Twin or multiple births
- ③ Not given breast
- ④ Early weaning
- ⑤ Malnour. siblings
- ⑥ Death of siblings under age 5
- ⑦ 4 or more living siblings
- ⑧ Less than 2 yrs diff. w/older sibl.
- ⑨ Father/mother

Weight at Birth
Kg.

Name _____

Health Center _____

Date of first visit _____

Child's name _____

Date of birth _____

Mother's name _____

Father's name _____

Family address _____

Immunizations

POLIO MYELITIS

Date of 1st dose

Date of 2nd dose

Date of 3rd dose

Date of booster

MEASLES

Date of vaccination

DPT or Triple (Diphtheria, Whooping Cough, Tetanus)

Date of first dose

Date of 2nd dose

Date of 3rd dose

Date of booster

BCG (Tuberculosis)

Date of vaccination



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Factors requiring special attention.....

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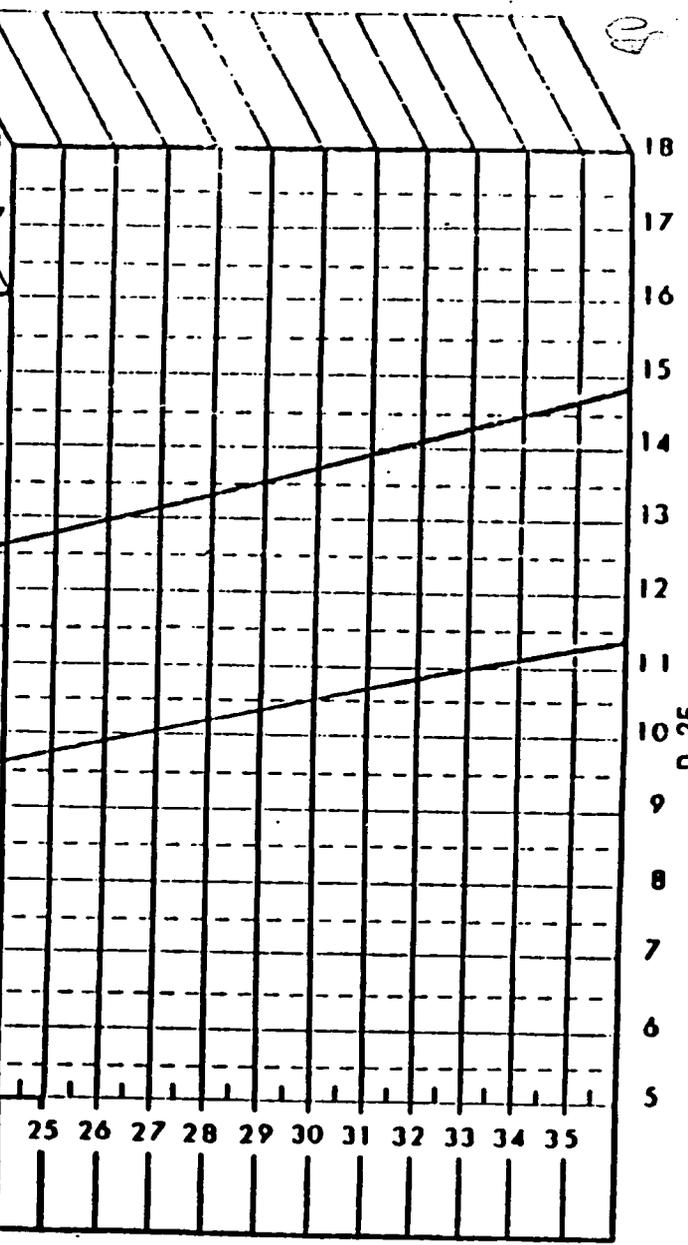
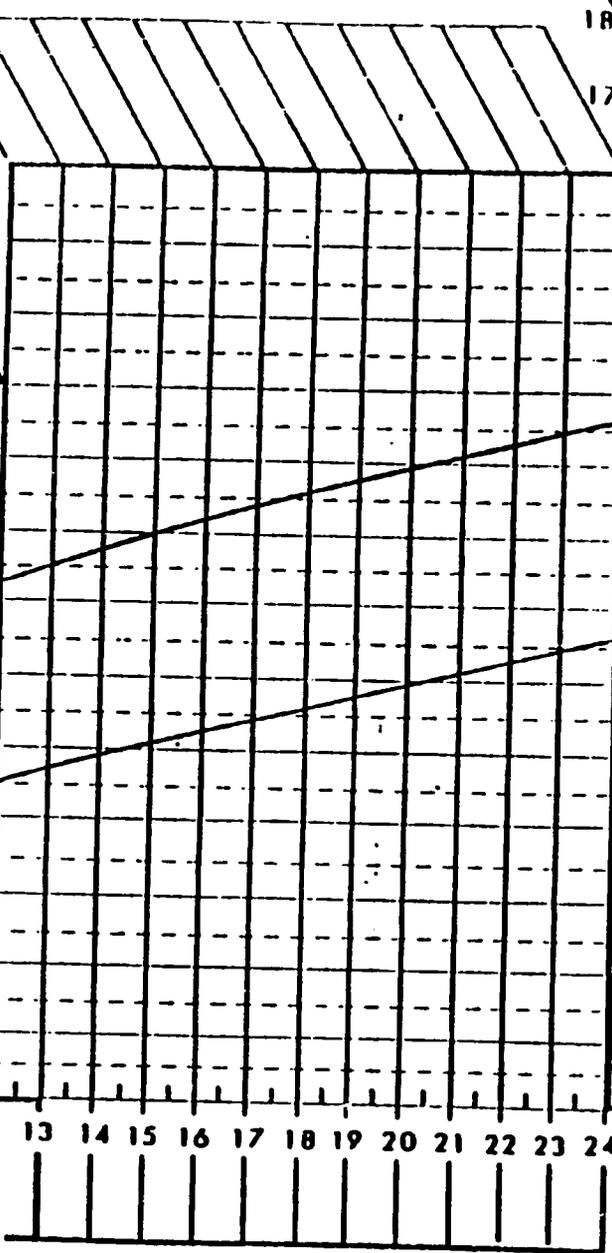
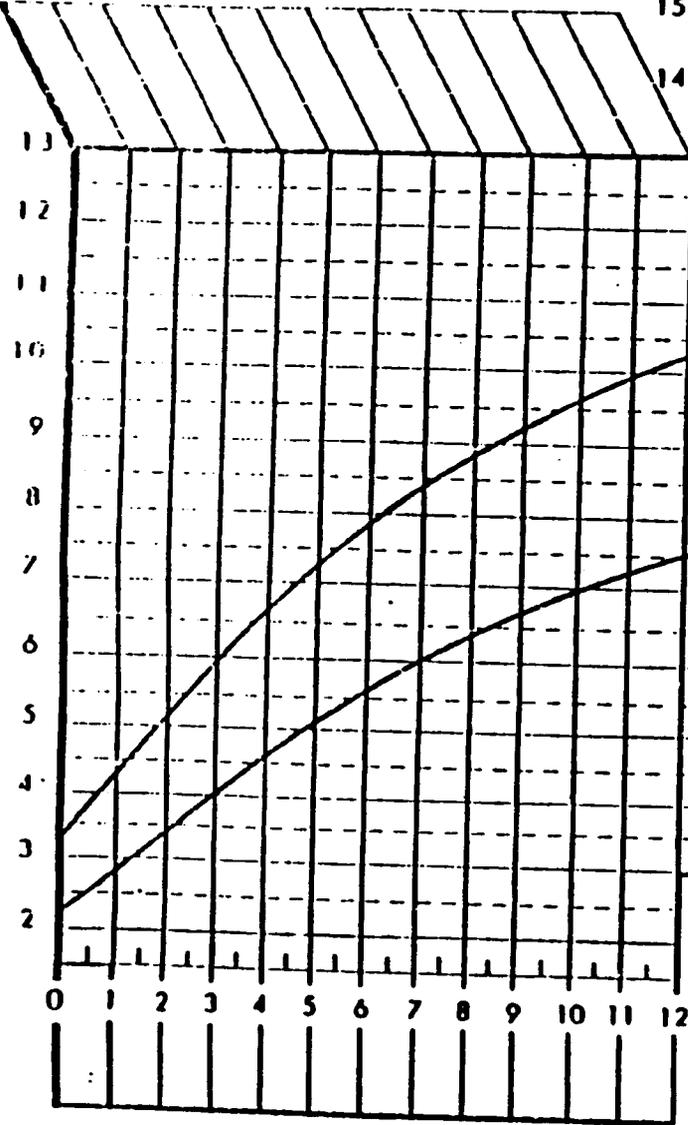
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Weight

Height

Weight

KILOGRAMS



1-2 Years

2-3 Years

0-1 Year

Age in Months

How is child growing?

↗

↘

INSTRUCTIONS FOR USING THE "CIMDER" THREE-COLOR TAPE*

*Adapted from: Evheverri O., Boehnheim H., Villafane P.: Validation of an Instrument to Measure the Nutritional Condition of Children Age 0 -6. CIMDER, Cali, 1979.

The "CIMDER" tape is an instrument for estimating the nutritional condition of children under five years of age. It is so named because it was developed and validated by Colombian researchers from the Centro de Investigaciones Multidisciplinarias en Desarrollo Rural [Center for Multidisciplinary Research in Rural Development] -- CIMDER -- in 1979.

The brachial perimeter is an anthropometric indicator of nutritional condition that serves to evaluate energy-protein malnutrition by measuring the circumference of the arm. There is a close correlation between the brachial perimeter and weight-age and weight-height category; measuring this indicator is subject to fewer causes of error than measuring weight.

Measuring the brachial perimeter with the CIMDER tape:

1. Make the child and mother comfortable and at ease.
2. Find out the child's age in months.
3. Choose the three-color CIMDER tape corresponding to the child's age in months.
4. Place the tape on the middle of the left arm, around the mid-point between the acromion and the olecranon, taking care that the arm is in normal position (at the side).
5. Adjust the tape without squeezing, pulling on the end of the tape.
6. Note the color in the eye of the tape.

Interpretation

Red indicates that the child is malnourished.

Yellow indicates that the child is in the early stages of malnutrition.

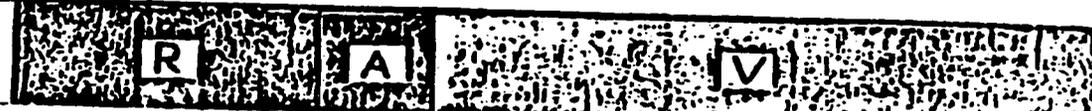
Green indicates that the child is well-nourished.

0-3 Months

TAPE 1 SIDE A



0-3 Months



UNICEF/MEXICO

Experimental tape

0-3 Months

4-7 Months

TAPE 1 SIDE B



4-7 Months

8-11 Months



8-11 Months

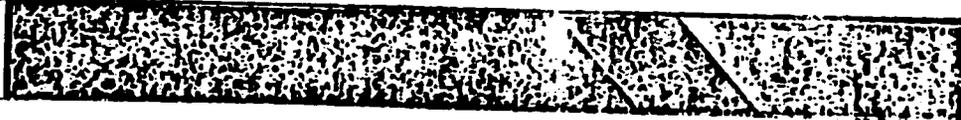
12-23 Months

TAPE 2 SIDE A



12-23 Months

24-47 Months



UNICEF/MEXICO

Experimental tape

24-47 Months

48-59 Months

TAPE 2 SIDE B



48-59 Months

60-71 Months



60-71 Months



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WEIGHT/AGE CLASSIFICATION OF NUTRITIONAL CONDITION (GOMEZ)*

Males

Age		DEGREE OF MALNUTRITION			
Years	Months	Normal	I	II	III
	0	≥ 3.0 kg	2.5-2.9 kg	2.0-2.4 kg	<2.0 kg
0	1	≥ 3.9	3.2-3.8	2.6-3.1	<2.6
	2	≥ 4.7	3.9-4.6	3.1-3.8	<3.1
	3	≥ 5.4	4.5-5.3	3.6-4.4	<3.6
	4	≥ 6.0	5.0-5.9	4.0-4.9	<4.0
	5	≥ 6.6	5.5-6.5	4.4-5.4	<4.4
	6	≥ 7.0	5.8-6.9	4.7-5.7	<4.7
	7	≥ 7.5	6.2-7.4	5.0-6.1	<5.0
	8	≥ 7.9	6.6-7.8	5.3-6.5	<5.3
	9	≥ 8.3	6.9-8.2	5.5-6.8	<5.5
	10	≥ 8.5	7.1-8.4	5.7-7.0	<5.7
	11	≥ 8.9	7.4-8.8	5.9-7.3	<5.9
	0	≥ 9.2	7.6-9.1	6.1-7.5	<6.1
1	1	≥ 9.4	7.8-9.3	6.2-7.7	<6.2
	2	≥ 9.6	8.0-9.5	6.4-7.9	<6.4
	3	≥ 9.8	8.2-9.7	6.5-8.1	<6.5
	4	≥ 10.0	8.3-9.9	6.6-8.2	<6.6
	5	≥ 10.2	8.5-10.1	6.8-8.4	<6.8
	6	≥ 10.4	8.6-10.3	6.9-8.5	<6.9
	7	≥ 10.5	8.8-10.4	7.0-8.7	<7.0
	8	≥ 10.6	8.9-10.5	7.1-8.8	<7.1
	9	≥ 10.8	9.0-10.7	7.2-8.9	<7.2
	10	≥ 11.0	9.1-10.9	7.3-9.0	<7.3
	11	≥ 11.2	9.3-11.1	7.4-9.2	<7.4
12	≥ 11.3	9.4-11.2	7.5-9.3	<7.5	

*The NCHS standard was used.

The Gomez classification expresses the state of malnutrition as a percentage of the median. Children above 90% are considered normal; children whose weight is between 75 and 90% are 1st degree malnourished; those between 60 and 75% are 2nd-degree; below 60%, 3rd degree.

The median is equal to 100%, which in the standard used is equivalent to the 50th percentile in the NCHS.

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Males

Age	Degree of Malnutrition
-----	------------------------

Years	Mos.	Normal			
	0	<211.3 kg.	9.4-11.2 kg.	7.5-9.3 kg.	<7.5 kg.
2	1	211.3	9.5-11.2	7.6-9.4	<7.6
	2	211.4	9.5-11.3	7.6-9.4	<7.6
	3	211.6	9.6-11.5	7.7-9.5	<7.7
	4	211.8	9.8-11.7	7.9-9.7	<7.9
	5	212.0	9.9-11.9	8.0-9.8	<8.0
	6	212.1	10.1-12.0	8.1-10.0	<8.1
	7	212.3	10.2-12.2	8.2-10.1	<8.2
	8	212.5	10.4-12.4	8.3-10.3	<8.3
	9	212.7	10.5-12.6	8.4-10.4	<8.4
	10	212.9	10.7-12.8	8.5-10.6	<8.5
	11	213.0	10.8-12.9	8.6-10.7	<8.6
		0	213.1	10.9-13.0	8.7-10.8
3	1	213.3	11.1-13.2	8.9-11.0	<8.9
	2	213.5	11.2-13.4	9.0-11.1	<9.0
	3	213.7	11.4-13.6	9.1-11.3	<9.1
	4	213.8	11.5-13.7	9.2-11.4	<9.2
	5	213.9	11.6-13.8	9.3-11.5	<9.3
	6	214.1	11.8-14.0	9.4-11.7	<9.4
	7	214.2	11.9-14.1	9.5-11.8	<9.5
	8	214.4	12.0-14.3	9.6-11.9	<9.6
	9	214.6	12.1-14.5	9.7-12.0	<9.7
	10	214.8	12.3-14.7	9.8-12.2	<9.8
	11	214.9	12.4-14.8	9.9-12.3	<9.9
		0	215.0	12.5-14.9	10.0-12.4
4	1	215.2	12.7-15.1	10.1-12.6	<10.1
	2	215.3	12.8-15.2	10.2-12.7	<10.1
	3	215.5	12.9-15.4	10.3-12.8	<10.3
	4	215.7	13.0-15.6	10.4-12.9	<10.4
	5	215.8	13.1-15.7	10.5-13.0	<10.5
	6	215.9	13.3-15.8	10.6-13.1	<10.6
	7	216.1	13.4-16.0	10.7-13.3	<10.7
	8	216.2	13.5-16.1	10.8-13.4	<10.8
	9	216.4	13.6-16.3	10.9-13.5	<10.9
	10	216.5	13.7-16.4	11.0-13.6	<11.0
	11	216.6	13.9-16.5	11.1-13.8	<11.1
		12	216.8	14.0-16.7	11.2-13.9

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AGE		DEGREE OF MALNUTRITION				MALES
Years	Months	Normal	I	II	III	
	0	≥16.8 kg.	14.0-16.7 kg.	11.2-13.9 kg.	<11.2 kg.	
5	1	≥16.9	14.1-16.8	11.3-14.0		
	2	≥17.1	14.2-17.0	11.4-14.1	<11.3	
	3	≥17.3	14.4-17.2	11.5-14.3	<11.4	
	4	≥17.4	14.5-17.3	11.6-14.4	<11.5	
	5	≥17.5	14.6-17.4	11.7-14.5	<11.6	
	6	≥17.7	14.8-17.6	11.8-14.7	<11.7	
	7	≥17.8	14.9-17.7	11.9-14.8	<11.8	
	8	≥18.0	15.0-17.9	12.0-14.9	<11.9	
	9	≥18.2	15.1-18.1	12.1-15.0	<12.0	
	10	≥18.3	15.2-18.2	12.2-15.1	<12.1	
	11	≥18.5	15.4-18.4	12.3-15.3	<12.2	
	12	≥18.7	15.5-18.6	12.4-15.4	<12.3	
					<12.4	

AGE

DEGREE OF MALNUTRITION

Years	Months	Normal	I	II	III
	0	≥2.9 kg	2.4-2.8 kg	1.9-2.3 kg	<1.9 kg
0	1	≥3.6	3.0-3.5	2.4-2.9	<2.4
	2	≥4.2	3.5-4.1	2.8-3.4	<2.8
	3	≥4.9	4.0-4.8	3.2-3.9	<3.2
	4	≥5.4	4.5-5.3	3.6-4.4	<3.6
	5	≥6.0	5.0-5.9	4.0-4.9	<4.0
	6	≥6.5	5.4-6.4	4.3-5.3	<4.3
	7	≥6.9	5.8-6.8	4.6-5.7	<4.6
	8	≥7.4	6.1-7.3	4.9-6.0	<4.9
	9	≥7.7	6.4-7.6	5.1-6.3	<5.1
	10	≥8.0	6.7-7.9	5.3-6.6	<5.3
	11	≥8.3	6.9-8.2	5.5-6.8	<5.5
1	0	≥8.6	7.1-8.5	5.7-7.0	<5.7
	1	≥8.8	7.3-8.7	5.9-7.2	<5.9
	2	≥9.0	7.5-8.9	6.0-7.4	<6.0
	3	≥9.2	7.6-9.1	6.1-7.5	<6.1
	4	≥9.4	7.8-9.3	6.2-7.7	<6.2
	5	≥9.5	7.9-9.4	6.4-7.8	<6.4
	6	≥9.7	8.1-9.6	6.5-8.0	<6.5
	7	≥9.9	8.2-9.8	6.6-8.1	<6.6
	8	≥10.1	8.4-10.0	6.7-8.3	<6.7
	9	≥10.3	8.5-10.2	6.8-8.4	<6.8
	10	≥10.4	8.6-10.3	6.9-10.2	<6.9
11	≥10.5	8.8-10.4	7.0-8.7	<7.0	
2	0	≥10.7	8.9-10.6	7.1-8.8	<7.1
	1	≥10.8	9.0-10.7	7.2-8.9	<7.2
	2	≥11.0	9.1-10.9	7.3-9.0	<7.3
	3	≥11.2	9.3-11.1	7.4-9.2	<7.4
	4	≥11.3	9.5-11.2	7.6-9.4	<7.6
	5	≥11.5	9.6-11.4	7.7-9.5	<7.7
	6	≥11.7	9.7-11.6	7.8-9.6	<7.8
	7	≥11.9	9.9-11.8	7.9-9.8	<7.9
	8	≥12.1	10.0-12.0	8.0-9.9	<8.0
	9	≥12.2	10.2-12.1	8.1-10.1	<8.1
	10	≥12.4	10.3-12.3	8.2-10.2	<8.2
11	≥12.5	10.4-12.4	8.3-10.3	<8.3	
12	≥12.7	10.6-12.6	8.4-10.5	<8.4	

Jb

AGE		DEGREE OF MALNUTRITION			
Years	Months	Normal	I	II	III
3	0	≥12.7 kg	10.6-12.6 kg	8.4-10.5 kg	<8.4 kg
	1	≥12.9	10.7-12.8	8.5-10.6	<8.5
	2	≥13.0	10.8-12.9	8.6-10.7	<8.6
	3	≥13.1	10.9-13.0	8.7-10.8	<8.7
	4	≥13.3	11.1-13.2	8.8-11.0	<8.8
	5	≥13.4	11.2-13.3	8.9-11.1	<8.9
	6	≥13.6	11.3-13.5	9.0-11.2	<9.0
	7	≥13.7	11.4-13.6	9.1-11.3	<9.1
	8	≥13.9	11.5-13.8	9.2-11.4	<9.2
	9	≥14.0	11.6-13.9	9.3-11.5	<9.3
	10	≥14.1	11.8-14.0	9.4-11.7	<9.4
	11	≥14.2	11.9-14.1	9.5-11.8	<9.5
4	0	≥14.4	12.0-14.3	9.6-11.9	<9.6
	1	≥14.5	12.1-14.4	9.6-12.0	<9.6
	2	≥14.6	12.2-14.5	9.7-12.1	<9.7
	3	≥14.8	12.3-14.7	9.8-12.2	<9.8
	4	≥14.9	12.4-14.9	9.9-12.3	<9.9
	5	≥15.0	12.5-14.9	10.0-12.4	<10.0
	6	≥15.1	12.6-15.0	10.1-12.6	<10.1
	7	≥15.3	12.7-15.2	10.2-12.6	<10.2
	8	≥15.4	12.8-15.3	10.2-12.7	<10.2
	9	≥15.5	12.9-15.4	10.3-12.8	<10.3
	10	≥15.7	13.0-15.5	10.4-12.9	<10.4
	11	≥15.8	13.1-15.7	10.5-13.0	<10.5
5	0	≥15.9	13.3-15.8	10.6-13.2	<10.6
	1	≥16.0	13.4-15.9	10.7-13.3	<10.7
	2	≥16.2	13.5-16.1	10.8-13.4	<10.8
	3	≥16.3	13.6-16.2	10.9-13.5	<10.9
	4	≥16.5	13.7-16.4	11.0-13.6	<11.0
	5	≥16.6	13.8-16.5	11.1-13.7	<11.1
	6	≥16.7	13.9-16.6	11.2-13.8	<11.2
	7	≥16.8	14.0-16.7	11.2-13.9	<11.2
	8	≥17.0	14.2-16.9	11.3-14.1	<11.3
	9	≥17.1	14.3-17.0	11.4-14.2	<11.4
	10	≥17.3	14.4-17.2	11.5-14.3	<11.5
	11	≥17.5	14.5-17.4	11.6-14.4	<11.6
12	≥17.6	14.6-17.5	11.7-14.5	<11.7	

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F O R M S

SECRETARIAT OF HEALTH
 UNITED NATIONS FUND FOR INFANCY

OHT-

Daily Activity Record

ORAL HYDRATION DEPARTMENT

Day _____ Mo. _____ Yr _____ Unit _____ City _____ State _____

No.	Name and Address	0-11m	12-59 m	≥ 60 m	PLAN A	PLAN B	PLAN C	Recovered	Referred Hospital
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									

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**SECRETARIAT OF HEALTH
UNITED NATIONS FUND FOR INFANCY
ORAL HYDRATION DEPARTMENT**

Day ___ Month ___ Year ___ Time ___ File No.

A. IDENTIFICATION

Name (Surname) (Maternal Surname) Give Name Age Sex (M) (F)

B. BACKGROUND

Diet: Maternal nursing: (Yes) (No) Weaning from milk: from breast:
Formula type: dilution: amount:
frequency of administration:
Other foods:

Pathology: Previous diarrheal episodes (frequency):
Other background:

C. CURRENT ILLNESS

E.D.A.: time of evolution: number of bowel movements/24 hrs:
last bowel movement:
characteristics: liquid mucus blood
Vomiting: in last 24 hours: last vomiting episode: FEVER: (over 38°C)
Other Symptoms:

D. PHYSICAL EXAMINATION

Somatometric Data:					Vital signs:			
kg	cm	G	Y	R	°C	/min	/min	
weight	Brach.	per.			Temp.	Pulse	Respiration	
					Cold Extremities	Capillary Filling	State of Consciousness	Anomalous Movements

Other observations:

[DIAGRAM No. 1]

Physician's name and signature:

Diagnostic Impression

NOTES ON PROGRESS

F. THERAPY PLAN

Patient referred to: Reasons: (Plan C) Other (specify):
 PLAN B Volume to be administered: A ml x B kg = C ml in D hours
Volume per hour (C/D) ml in doses of ml every minutes

Was initially hydrated by IV: (No) (Yes) time: solution: volume:
 Time Admission 1 2 3 4 5 6 7 8 Discharge

- Weight (kg)
- Temp. (rectal)
- Pulse/min.
- Respiration/min.
- Irritability (0/+++)
- Drowsiness (0/+++)
- Sunken fontanel (0/+++)
- Sunken eyes (0/+++)
- Oral mucous (Y or N)
- Tears (P or A)
- Skin fold
- Diuresis (P or A; or ml)
- Dehydration (0/+++)
- Bowel movements (# or degree)
- Abdominal distension (P or A)
- Abdominal perimeter (cm)
- Oral serum ml/hr indicated
- Oral serum ml taken
- Other liquids

Day Month Year Time

G. DISCHARGE

Final weight: kg Degree of malnutrition (Gomez): (I) (II) (III)
 Retrospective calculation of degree of dehydration: 100 - previous wt (kg) x
 100/final weight = (5% = I; 5-9% = II; 9% = III)

Instructions: Oral serum (half cup) (one cup) after each bowel movement
 Mother's Milk: ()
 Formula type: dilution: amount: frequency:
 Additional feeding:

H. REVIEW AT ____ O'CLOCK Day Month Year Time

Physician's name and signature

Weight: kg Accepting: Oral Serum () Mother's Milk () Formula ()
Food ()

PERSISTENCE OF: Diarrhea () Vomiting () STATE OF HYDRATION:

Remarks:

SECRETARIAT OF HEALTH
UNITED NATIONS FUND FOR INFANCY
ORAL HYDRATION DEPARTMENT

OHT-3

Educational Evaluation Questionnaire for Mothers
to Be Administered by the Health Worker

Instructions:

- A. Read what you need to know with each question.
 - B. Ask the appropriate question.
 - C. Make an "x" at the mother's response, or where appropriate write it on the line.
1. You need to know what the mother understands by dehydration.
Question:
What do you understand by dehydration?

Does she identify dehydration with loss of water? Yes No
 2. You need to know whether the mother recognizes the signs of dehydration in her child.
Question:
How do you know when your child is dehydrated?

Drowsy Dry mouth Sunken fontanel

Sunken eyes Very thirsty Skin fold Tearless crying
 3. You need to know whether the mother believes that the child must continue eating when it has diarrhea.
Question:
Do you think your child must continue eating when he has diarrhea?

Yes Why? No Why?
 4. You need to know whether the mother has assimilated Diagram No. 2 (Preventing Dehydration).
Question:
What do you think you should do for your child when he has diarrhea?

Increase amount of liquids Give him oral serum

Homemade solution Continue feeding him

Look for signs of dehydration Take hygiene measures

Other (combinations, cool drinks, medication, etc.):
 5. You need to directly evaluate preparation of the oral serum.
Question:
Tell me, what can you give your child to keep him from becoming dehydrated? How is it prepared?

Describes the recipe correctly.

Prepares it correctly.

Does she need the instructions repeated? Yes No

6. You need to know if she administers the serum correctly.

Question:

How do you give the serum to your child?

By teaspoonfuls

With a nipple

Other

7. You need to know whether she can describe viable measures for preventing other episodes of diarrhea.

Question:

What could you do at home to protect your child from diarrhea?

Washing hands

Protecting food

Protecting water

Disposing of wastes

Other

8. You need to have family data for future housecalls for evaluation. Explain to the woman.

Question:

What is your name?

What is your full address?

Telephone?

Thank you for your cooperation.

Date

Administered by

SECRETARIAT OF HEALTH
 UNITED NATIONS FUND FOR INFANCY
 ORAL HYDRATION DEPARTMENT

OHT

MONTHLY ACTIVITIES REPORT

Yr _____ Mo _____ Yr _____ Unit _____ City _____ State _____

Day	Total Patients per Day	0-11m	12-59 m	≥ 60 m	PLAN A	PLAN B	PLAN C	Recovered	Referred to hospitalization
1									
2									
3									
4									
5									
6									
7									
8									
9									
0									
1									
2									
3									
4									
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9									
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
0									

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