

CLASSIFICATION  
PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE  Control of Diarrheal Diseases	2. PROJECT NUMBER 263-0137	3. MISSION/AID/W OFFICE USAID/Cairo
	4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) <u>85-3</u>	
<input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION		

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING		7. PERIOD COVERED BY EVALUATION	
A. First PRO-AG or Equivalent FY _____	B. Final Obligation Expected FY _____	C. Final Input Delivery FY <u>86</u>	A. Total \$ _____	B. U.S. \$ <u>26 million</u>	From (month/yr.) <u>4/82</u>	To (month/yr.) <u>5/84</u>
					Date of Evaluation Review <u>April 1985</u>	

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICE RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. Accelerate ORT training for health professionals to provide nationwide coverage of MOH services.	USAID/C. Collins MOH project Exec. Direct	9/85
2. Improve project coverage espically in Upper Egypt.	" "	9/85
3. Strengthen governate level coordination through formation of governate coordination committee.	" "	9/85
4. Establish baseline data on diarrhea morbidity and mortality in children and monitor the project mortality reduction target through cluster surveys..	" "	8/87
5. Fund further research in the control and treatment of diarrhea and nutrition.	" "	8/87
6. Convene a national conference/workshop on diarrheal disease activities and research in Egypt.	" "	11/85

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT		
<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify) _____	A. <input checked="" type="checkbox"/> Continue Project Without Change		
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____	B. <input type="checkbox"/> Change Project Design and/or		
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____	<input type="checkbox"/> Change Implementation Plan		
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____	C. <input type="checkbox"/> Discontinue Project		

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)		12. Mission/AID/W Office Director Approval	
CCollins, HRDC/HCC	Handly, DD	Signature <u>Frank B. Kimball</u>	
Woldham, HRDC/HCC		Typed Name Frank B. Kimball, DIR	
BWilder, AD/HRDC		Date <u>May 14, 1985</u>	
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NEAR EAST EVALUATION ABSTRACT

PROJECT TITLE(S) AND NUMBER(S) Control of Diarrheal Diseases Project (263-0137)		MISSION/WORK OFFICE USAID/Cairo	
PROJECT DESCRIPTION The purpose of this project is to reduce child mortality by making rehydration services and material, especially oral rehydration therapy (ORT), widely available and used through a national program.			
AUTHORIZATION DATE AND U.S. LOP FUNDING AMOUNT 9/27/84 \$26 million	PES NUMBER 85-3	PES DATE November 84	PES TYPE <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Other (Specify) <input type="checkbox"/> Special <input type="checkbox"/> Terminal
ABSTRACT PREPARED BY, DATE NShafik, DPPE/PO November 1984	ABSTRACT CLEARED BY, DATE CCollins, HRDC/H November 1984		

The evaluation was carried out by a joint GOE/USAID/UNICEF/WHO team over a two week period. The review participants included twenty-two individuals with a broad range of expertise in public health, pediatrics, nutrition, marketing, and training. The team was mandated to review the Phase One developmental period of the project prior to full-scale national implementation of the program in Phase Two.

The project has had "remarkable success" achieving its outputs and purpose under Phase One. An organizational structure has been developed at the central and governorate level that coordinates effectively with other programs and agencies. Training in oral rehydration therapy has included over 500 physicians, 400 nurses, 29 governorate chief pharmacists, 10 medical representatives, and thousands of professionals who have participated in seminars, conferences, and postgraduate orientation to rural service. An oral rehydration salts (ORS) production facility is operational and produced 2 million 27.5 gram packets and 6.2 million 5.5 gram packets in 1983. The project has also developed standard rehydration center supply kits and a marketing plan. Surveillance and baseline data on diarrhoea morbidity and mortality are being compiled in the areas where the project is functioning. The project is also conducting action-oriented research on clinical patterns of diarrhoea, etiology, and operational and sociocultural aspects of ORT. Most importantly, the project has succeeded in increasing the awareness and use of oral rehydration therapy as a treatment for diarrhoea. The number of survey respondents who identified television as their source of information on ORT increased from 4 percent to nearly 60 percent following a pilot T.V. campaign in Alexandria. Over 90 percent of low income mothers interviewed recalled watching the ORS commercial the day before in Cairo and over half remembered the content. Recent surveys conducted throughout Egypt indicated that 40 percent of the mothers interviewed knew about and used ORS.

The evaluation identifies areas where further attention is needed. Project staffing, financial management, disbursement procedures, and evaluation of cost effectiveness need to be addressed, particularly as the project expands. Coordination and supervision at the governorate level needs to be strengthened. The production and distribution of ORS needs to be increased to meet the present level of demand. Additional training is needed in clinical management for health professionals, especially as the demand for ORT increases as a result of the successful communications effort.

The Project Secretariat has responded to the more immediate evaluation recommendations. A Secretariat Plan for project staffing and personnel policies has been developed and approved by USAID, and a consultant firm is currently developing a financial management system. The MOH and UNICEF have agreed to standardize the 5.5 gram ORS sachet for distribution in Egypt, and to change to the Citrate formula for Summer 1985 production. A contract with Chemical Industrial Development for the projected ORS production demand has been signed for 1985. A successful television campaign was implemented in Summer 1984 and will continue in 1985. Efforts to follow through on other recommendations are underway.

Lessons Learned: (1) The semi-autonomous nature of this project has facilitated implementation of activities and permits recruitment of expertise from a variety of sources; (2) The problem of salary scales and incentive payments complicate project implementation; (3) Outreach and dissemination programs must be coordinated closely with the provision of supplies and services.

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August 1984

MINISTRY OF HEALTH  
NATIONAL CONTROL OF DIARRHOEAL DISEASES PROJECT, EGYPT

REPORT OF THE JOINT GOVERNMENT/USAID/UNICEF/WHO  
PHASE ONE REVIEW  
19 - 31 May 1984

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NATIONAL CONTROL OF DIARRHOEAL DISEASES PROJECT, EGYPT

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## 1. INTRODUCTION

A review of Phase One of the National Control of Diarrhoeal Diseases Project (NCDDP) was carried out by a joint Government/USAID/UNICEF/WHO review group from 19 to 31 May 1984. The composition of the group and the programme of the review are attached (Attachment 13).

## 2. PURPOSE OF THE REVIEW AND TERMS OF REFERENCE

The NCDDP started in January 1983, and Phase One of the project is due to end in June 1984. This phase of the project has been developmental, or a rehearsal for full-scale implementation of the project in Phase Two. This second phase of the project is due to last three and a half years, and thus the NCDDP project will finish by the end of 1987. At this time it is expected that all project activities will form part of the health system of the country, and, in addition, that there will have been already a major impact on diarrhoea mortality in children.

It was therefore decided by the Project Steering Committee that a joint review of Phase One of the project should take place to provide an independent assessment that could be used in planning for Phase Two.

The terms of reference of the review were as follows:

- (a) to examine the present situation of the diarrhoeal diseases problem with special reference to diarrhoea mortality and morbidity in children;
- (b) to examine the status of the NCDDP in terms of Phase One implementation, and to identify its achievements and problems;
- (c) to make recommendation for the future development of the programme;
- (d) to submit a report to the Executive Director of the national CDD programme.

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### 3. METHODS USED

The method adopted for the review followed that described in the WHO Manual for the Planning and Evaluation of National Diarrhoeal Diseases Control Programmes (WHO/CDD/SER/81.5).

The group first met and had an intensive briefing on all the components of the NCDDP (marketing and mass education, research, training, ORS production and distribution, coordination and implementation, evaluation, and administration).

A very large amount of information had been summarized for the review group beforehand, and assisted the review materially.

The review group identified information to be collected during visits to the field, and questionnaires were prepared for each level to be visited: governorate, district, health facility, and community.

The group then divided into four teams and visited four different governorates previously selected to be representative of the different parts of the country. The governorates visited were: Cairo, Alexandria, Dakahliya, and Qena.

Following the field visits each team prepared and presented a short report to the group, with special attention being given to achievement. The group noted the problems identified and recommendations made by each team for the governorate visited.

The review group considered the field visit findings (Annex 1 gives findings in details) and the central level information available, and prepared the conclusions that follow in this report.

### 4. CONCLUSIONS OF THE REVIEW

#### 4.1 A BRIEF HISTORY OF THE NCDDP

Oral rehydration therapy began in Egypt as long ago as the early sixties. In 1961, following a WHO consultancy, the Ministry of Health started to advocate the use of this therapy. In 1966 the Ministry of Health included ORT in its booklet on MCH guidelines, although the formula of the solution used was different from the present formula.

In 1977, the Ministry of Health adopted the WHO ORS formula and began distributing 27.5g packets of ORS to the health centres. These packets were supplied by UNICEF, who have maintained this supply to the present day through establishment of a production line in 1982 at Chemical Industries Development Co. (CID) and provision of the necessary supplies and equipment. In 1978 a commercial product, "Rehydran" was made available through pharmacies from CID.

In 1980 the Strengthening of Rural Health Delivery Services project, in collaboration with WHO, studied the effect of ORS provided at the household level (packets or home-prepared) and showed marked reduction in mortality, compared to control areas. This study laid the foundation for a national programme.

In 1981 EMRO collaborated with the Department of Paediatrics, Alexandria University, in the establishment of a Regional Demonstration and Training Centre for Oral Rehydration. This centre continued to give considerable support the National Programme, particularly in its early phases.

In 1981 a USAID Grant Agreement was signed with the Government of Egypt for the establishment of the NCDDP, and in January 1983 Phase One of the project started activities.

## 4.2 Achievements

### General

4.2.1 The overall objective of the NCDDP is to reduce child suffering and mortality from diarrhoeal disease within a period of five years (by the end of 1987) by making rehydration services and material (especially ORT) widely available and used through a national programme. At the end of the project, a reduction in child mortality of at least 25% from diarrhoea is anticipated.

The objectives of Phase One of the project may be stated as follows: to organize, plan, and establish the project to permit the achievement of its objective. More specifically, Phase One was required to organize a national steering committee, a national secretariat, to establish the programme on a test basis in one governorate, and to develop and test feasible strategies and activities for national implementation in Phase Two.

The review group found that the project had had a remarkable success in achieving the objectives of its Phase One as stated above. That is to say, the project now has a national steering committee that provides strong direction to the project. The project has a competent, semi-autonomous secretariat under the auspices of the Ministry of Health. The project has reinforced good oral rehydration therapy services in the Alexandria and Giza governorates, and has helped in their establishment in other governorates.

Furthermore, as a result of regional seminars, training of health workers from different areas, and the pilot use of media on a national scale, the project has already, in effect, become national, with a corresponding increase in awareness and use of ORT. This success is even more remarkable when bearing in mind the short time period and the delayed start of some activities of Phase One.

#### Specific achievements (As of May 31, 1984)

##### 4.2.2 Management

The project has successfully developed an effective organizational structure at central and governorate level. At the central level, coordination with other programmes and agencies is good. Coordination with governmental and with non-governmental agencies is good.

The semi-autonomous nature of the project greatly facilitates implementation of activities and permits recruitment of staff from a wide variety of sources such as universities and the private sectors, and permits the project to have contacts with many different groups.

##### 4.2.3 Training

With regard to training of staff in rehydration therapy, training of trainers has been accomplished and eleven rehydration training centres have been established in six governorates. Over 500 physicians and approximately 400 nurses have already been trained in techniques of rehydration as well as 29 chief pharmacists of governorates, and 10 professionals who will work as medical representatives to physicians and pharmacists. Thousands more professionals have been informed via seminars and conferences and postgraduate orientation to rural service. Details of the project's training courses are

given in section 4 of Annex 1.

#### 4.2.4 ORS supplies

An ORS production facility is operational in the State firm Chemical Industries Development Co. (CID). The Ministry of Health is obtaining 27.5 gram packets of ORS for government health facilities from UNICEF (produced by CID) and CID produces a substantial supply of 5.5 gram packets of ORS (Rehydran) for distribution on the open market. In 1983 a total of 2 million 27.5 gram packets and 6.2 million 5.5 gram packets were produced. In 1984 it is planned to produce the same quantity of 27.5 gram packets and 17.75 million 5.5 gram packets. A marketing plan has been formulated. The project has succeeded in developing and distributing standard rehydration centre supply kits (cups, spoons, mothers' chairs, a standard I.V. formulation, etc.).

#### 4.2.5 Treatment of diarrhoea

The project has succeeded in increasing the use of Oral Rehydration Therapy (ORT) to a remarkable extent. ORT is accepted and widely used by health workers. Proper feeding during diarrhoea is generally promoted and this is supported by the MCH activities of the Ministry of Health.

A recent series of cluster surveys conducted throughout Egypt during an EPI/PHC evaluation indicated that 40% of mothers interviewed knew about and used ORS.

#### 4.2.6 Surveillance

Surveillance data on diarrhoea morbidity and mortality are being regularly collected from areas where the project is functioning. In addition the project has assembled, from its own and other studies, a considerable amount of baseline data. At the moment the project register is widely used by the service component of the NCDDP.

The majority of diarrhoea deaths occur in children under 1 year; the under 3 year old diarrhoea death rate has been variously estimated. In areas where ORS is not used it was reported to be 39 per 1000 (Dr B. Tekce, Oral Rehydration Therapy, an assessment of mortality effects in rural Egypt. Studies in Family Planning 13, 315-327, 1982.). Diarrhoea death rate under 2 years old was reported to be 34/1000 (Dr A.B. Mobarak et al, Diarrhoeal

Diseases Control Study, Strengthening Rural Health Project, 1980).

In a comparative study it was found that the fatality rate for acute diarrhoea is higher in Upper Egypt as compared with Alexandria (Dr L. El-Sayyad, Dr W.A. Hassouna, Dr M. Taylor, final report of the study of incidence and diarrhoea associated mortality among under 5 year olds in two governorates of Egypt, EMRO, Alexandria, October 1983).

#### 4.2.7 Communications

A three month pilot campaign in Alexandria followed by a one month national TV campaign have been carried out. Following the TV campaign the number of respondents interviewed in a survey by the project, mentioning TV as their source of information on the management of dehydration, increased from 4% to nearly 60% in Alexandria. In another survey by the project it was found that more than 90% of low income mothers interviewed recalled watching the ORS commercial the day before in Cairo and over half of these remembered the two essential messages (recognize dehydration and use ORS). In Sohag a later survey showed recall and retention at a lower level. Communication to health professionals was carried out through conferences, meetings, documentary materials and preparation of a video tape.

#### 4.2.8 Research

Much action research has been conducted by the project, providing essential information for developing, planning and implementing the strategies and activities of the project. During Phase One, the project conducted or sponsored 18 studies covering clinical patterns of diarrhoea, aetiology, operational aspects of ORT, and sociocultural aspects, and coordinated with universities and other MOH projects in action-oriented research. A most thorough ethnography of diarrhoeal disease has been prepared.

### 4.3 Issues and problems

#### 4.3.1 Management

At the central level, the project secretariat faced certain difficulties, particularly in the area of staffing and financial management. A number of important posts were only filled late in Phase One, including those of Director of Administration and Director of Training. There is as yet no set salary scale and, in addition, the difference between Government and private salaries creates recruiting problems. The rapid expansion of the project

during Phase One has meant that certain activities have not yet received adequate attention, e.g.: disbursement procedures, evaluation of cost effectiveness and organization of financial management.

At governorate and district levels, the review found that coordination and supervision of CDD activities were not yet fully developed, partly due to the fact that planning takes place only at central level. In some governorates there is a lack of nursing personnel, and a lack of vehicles for supervisory staff. USAID approval and procurement mechanisms can cause up to several months delay.

#### 4.3.2 Training

Because of the success of Phase One, especially the communication campaign, the urgency to train a large number of health personnel in clinical management has increased. In addition, up to now, the project has not conducted other types of training. The review noted particularly the absence of training in managerial skills and supervision for CDD at peripheral levels. The inclusion of CDD in the curricula of medical and nursing schools is not yet completed, but is already being planned in some schools. A lack of knowledge was observed amongst a very important group, the pharmacists.

#### 4.3.3 ORS production and distribution

The review noted that there has been some delay in the expansion of ORS production to meet the present level of demand in the private sector. This has been due to certain difficulties with importing packaging materials; and the fact that there is no alternative producer for ORS has meant that there is no other source available in the country.

#### 4.2.4 Treatment of diarrhoea

There is still a lack of acceptance, knowledge, and use of ORT and nutritional therapy among some health professionals, including paediatricians and pharmacists. It is not surprising, therefore, to find that the use of fasting, antidiarrhoeals and antibiotics in treatment is still widespread, especially in the private sector.

The review group noted with concern that the overconcentration of ORS in the home due to inadequate instruction to the mother appears to be the cause of some episodes of hypernatremia detected at the main referral hospital in Cairo. Given the project recommendation on early use of ORS starting, if necessary, in the home, mothers and pharmacists must know the correct use of the salts.

#### 4.3.5 Communication support

The success of the media campaign has been noted, but due concern is expressed that the project should expedite training, and the supply of ORS. Furthermore, the media messages were aimed at the target population, i.e. mothers; corresponding activities to motivate and inform health professionals, especially the general practitioners and pharmacists, have not kept pace.

#### 4.4 Recommendations

##### Management

4.4.1 The review recommends that the management difficulties at central level be resolved as soon as possible. Alternative ways for solving the question of salary scales should be submitted to the steering committee for decision and approval.

4.4.2 As regards financial management, it is recommended that an office procedure manual be prepared, and disbursement procedures and the USAID approval process be speeded up.

4.4.3 At governorate level, the review recommends that coordinating committees be formed to improve coordination and communication at that level. The coordinators should be chosen for their interest and activity.

##### Training

4.4.4 Speedy attention should be given to the training of pharmacists to ensure that customers are properly informed about how to use ORS.

4.4.5 It is recommended that training of health workers in rehydration and nutritional therapy be accelerated.

4.4.6 Training of staff in CDD management skills is recommended, especially at governorate and district levels. The WHO/CDD supervisory skills course in Arabic is suggested for this with appropriate modifications.

### ORS supplies

The review feels that this area needs very careful and immediate attention to ensure adequate supplies of ORS for Phase Two.

4.4.7 The review recommends that the project's policy of using the 5.5 gram packet be implemented forthwith, and that the one-litre packet be used only for health facilities for use on the premises. One-litre packets should no longer be given out to mothers.

4.4.8 To ensure adequate supplies of the 5.5 gram packet, the review recommends that production be increased at CID. In coordination with UNICEF, the project should work with CID to develop additional production lines.

4.4.9 The review attaches great importance to the recommendation that other commercial firms be sought to produce and market a 5.5 gram packet as soon as possible. This will be the best way to ensure adequate ORS supplies in the long term.

4.4.10 The review recommends that the project now plans the action required to change to the citrate formula for ORS, so that this change can be made if this is agreed by the Ministry of Health Steering Committee.

4.4.11 The review recommends that, in particular, efforts be made to ensure that pharmacies are adequately supplied with the 5.5 gram packet to meet the rapidly increasing public demand.

4.4.12 The review recommends that the WHO/UNICEF ORS production engineer visit the project in the near future to advise on technical questions of production.

### Treatment of diarrhoea

4.4.13 The review group endorses the present approach planned by the project for Phase Two in integrating rehydration and nutritional therapy as part of the Government's health services.

4.4.14 The review group feels that in some areas coverage by rehydration services is not adequate (especially rural Upper Egypt) and recommends that the project corrects this by suitable outreach and promotional activities. The

latter could be carried out in collaboration with other field project in health.

4.4.15 The review noted with some concern that a number of cases of hypernatremia are being reported, and recommends that the project monitors the situation closely and ensures the correct use of ORS. Especially, the review recommends that the sale of ORS by private pharmacies must be accompanied by proper instructions.

4.4.16 It is recommended that the project continues to promote ORT among health professionals as the primary method of treatment and provides guidelines for specific use of antidiarrhoeal drugs.

#### Surveillance and evaluation

4.4.17 To permit setting a baseline, and monitoring of the project's mortality reduction target, the review strongly endorses the proposal to conduct a series of nationwide cluster surveys on diarrhoea mortality and morbidity in children. To permit monitoring of the project's services, intermediate targets should be developed and a longitudinal survey of sentinel sites should continue.

4.4.19 It is recommended that a further evaluation of the project be carried out, in 1985, after two more diarrhoea seasons.

#### Communications support

4.4.20 The review noted the important impact made by the media campaign and recommends that, before the next campaign and for subsequent campaigns, the project phases activities to ensure that training and services can support anticipated demand for ORS. A delay of about two months before launching the next television campaign is recommended.

4.4.21 It is also strongly recommended that this component of the project develops messages to the health personnel that will reinforce the correct usage of ORS, as well as to families for use in the home, and that these messages are promoted also through the health services.

## Research

4.4.22 The review recommended further research on other interventions for reduction of morbidity and mortality, e.g. impact of measles vaccination, domestic hygiene and others.

4.4.23 The review recommends as specific topics for research the following:

- studies of super ORS and rice-based ORS as well as on alternative presentations and formulations of ORS
- studies of most appropriate home prepared foods to be used with ORT
- studies of number of diarrhoea cases requiring ORS treatment and follow up of their progress
- better definition of microbiological causes of diarrhoea
- studies of antecedents for hypernatremia
- costs of care to health facilities and families with and without ORT
- cost effectiveness analyses of the components of the project.

4.4.24 The team noted that in the field of diarrhoeal disease research many other agencies and projects are conducting studies, and that the project should establish links with those activities.

4.4.25 The team feels it is time to convene a workshop with leading clinicians, community health scientists and social scientists to discuss further research activities to be supported by the project and to establish priorities.

## 5. ACKNOWLEDGEMENTS

The review group wishes to acknowledge the hard work and complete cooperation of the NCDDP staff who painstakingly prepared much material for the review, and who collaborated enthusiastically in it.

The group also wishes to express its thanks to the Ministry of Health for authorising the review and for its support and help.

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Finally, the review group would like to recognise the hard work, patience, and wisdom of the outgoing Executive Director, Dr Loutfi El Sayyad, and to hope that he will enjoy an active and happy retirement. The group wishes the new Executive Director, Dr Abdel Aziz Sharawi, every success in his assignment.

ANNEX I  
DETAILED FINDINGS OF THE REVIEW

1. The National CDD Programme and the NCDDP

(a) History

As has already been mentioned, the control of diarrhoeal diseases and the use of oral rehydration therapy has a long history in Egypt. Indeed, Egypt may be said to have been one of the pioneers of the use of such therapy on a large scale in their health services. In 1961, following a visit to Egypt by WHO consultants, it was determined that one way of reducing deaths from diarrhoeal diseases in children would be to use oral rehydration therapy. At that time, the present formula that is now considered by WHO to be the optimum all-purpose solution, had not been developed.

In 1977, a pilot project was carried out with the aid of UNICEF and WHO to assess the effectiveness of the WHO-recommended formula ("Oralyte") in the treatment of dehydration among children aged 3 to 36 months suffering from diarrhoea. The treatment was started in MCH units and continued at home. It was found that mild to moderate cases of dehydration could be satisfactorily treated.

In 1978, it was decided to launch a national programme for oral rehydration. The programme was intended to work through the network of PHC units in the country. The main components of the programme were:

- provision of ORS: 1 litre packets were provided by UNICEF and distributed to the health units. The company, C.I.D., also produced ORS packets of 5.5 grams under the name Rehydran. These were for sale on the local market. In addition local pharmacies and health facilities were encouraged to make up their own ORS.
- training and reorientation of health workers. Two-day courses for doctors and nurses were given.
- health education: was carried out through the health services to ensure that mothers were aware of the dangers of dehydration and the use of ORS.

- evaluation of the programme's activities: monitoring of activities was based on obtaining information on cases, deaths, cases treated, and amount of CRS used.

It should be clear therefore that there was a well-defined national CDD programme in operation as from 1978. The NCDD project formulation exercise began in 1981, and the main reason for deciding to develop such a project was the fact that ORT had already been successfully used in Egypt, especially in the trial by the Strengthening of Rural Health Delivery Services project, and that there was ample evidence from documented studies that diarrhoea mortality in children could be reduced by ORT.

The NCDDP was designed to reinforce, expand, and accelerate CDD activities, especially to reduce mortality in children through the use of ORT. The NCDDP grant agreement with USAID was signed in September 1981, and the project actually started its activities in January 1983.

It should be noted that in this report the initials NCDDP or the word project refer specifically to the USAID grant-assisted project, and the present review was undertaken to evaluate Phase One of this project. Where the phrase national CDD programme is used, or simply, the programme, this is intended to imply the total national effort in CDD undertaken by the Ministry of Health since 1978. At the end of the NCDDP in 1987, the national CDD programme will continue as one of the health programmes of the Ministry of Health.

#### (b) CDD plans

There are a number of planning documents available for the NCDDP. The original grant agreement is supplemented by the project proposal. On the basis of these documents, plans have been prepared for each component of the project. There is a separate document entitled: Plan of Operations for the National Control of Diarrhoeal Disease Campaign. This in effect the plan for the national programme. This document was prepared in 1982. In addition, there is a plan of work for 1984 for the NCDDP.

#### (c) Organization

Since 1978, the national CDD programme was operated within the Ministry of Health from the Division of MCH. However, with the start of the NCDDP, there

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is now a separate secretariat or office that is semi-autonomous and responsible to the NCDDP steering committee that is chaired by the Minister of Health. The organizational plan of the project at central level is shown in Attachment 3.

(d) Management structure of the NCDDP:

Since the beginning of the project, it can be said that, in organizational terms, the national programme was replaced by the project. This situation will continue until the project ends.

On all matters of policy and direction, the project is guided by, and is responsible to, the national CDD steering committee. The terms of reference of this committee are as follows:

1. To put forth the general policy for implementing all activities of the project.
2. To follow up, discuss and review the evaluation of these activities.

The steering committee is made up of members from the following agencies or bodies:

- the Minister of Health, Chairman.
- the Undersecretary for Basic Health Services and Family Health, the Ministry of Health, Vice chairman.
- the NCDDP Executive Director.
- the Director of Information, the Ministry of Health.
- the Director of MCH, the Ministry of Health.
- The Director of the Urban Health Project, The Ministry of Health.
- The Director of Strengthening of Rural Health, Delivery Services Project, the Ministry of Health.
- The Director of the Second Population Project.
- A representative from the Ministry of Information.
- The Chairman of the Board, the C.I.D. Company.

- The Professor of Paediatrics, Cairo University.
- The Professor of Paediatrics, Alexandria University.
- The Professor of Paediatrics, Eir. Shamas University.
- A Representative of the Ministry of Social Affairs.

The steering committee came into being in early 1983, and since then has met regularly at monthly intervals. Minutes are taken of each meeting and circulated.

(e) Personnel working with the NCDDP

The project secretariat at central level has at present 27 staff. Ten are technical.

At the governorate level, there is a NCDDP coordinator appointed for each governorate. The post description for these coordinators is as follows:

- to attend the monthly meetings with the Executive Director of the NCDDP.
- to assist in setting policy and in planning for the implementation of the project at governorate level.
- to collaborate in the conduct of research and evaluation activities in chosen facilities in their governorate.
- to supervise the training of staff in their governorate.
- to meet regularly with the staff of the health facilities in their governorate, and to ensure that staff are properly informed of the project's policies and planned activities. Also to ensure supervision of the implementation of project activities in the governorate, and to give appropriate feedback to staff.
- to work with local community leaders and organisations to ensure their collaboration and that of the community in implementation of the project.
- to make recommendations concerning incentives for the staff working with the project in their governorate.

- in their governorate, to organise a steering committee for the project and a secretariat for the project.
- to ensure that information on surveillance and monitoring of diarrhoeal diseases and project activities is collected, analysed, and transmitted to the appropriate levels.

2. BUDGET, AND OTHER RESOURCES AVAILABLE TO THE PROJECT

(a) Budget available

The budget available for the NCCDP is considerable. For a five-year period the USAID grant amounts to 26 million dollars. The Government of Egypt counterpart budget for the project is nearly 20 million dollars. This is a major investment into one health programme, and is a clear indication of the very high priority given by the Government to the control of diarrhoeal disease mortality.

The following table\* summarises the budget for the project for the period 1 August 1983 to 30 June 1984.

<u>Project component</u>	<u>Egyptian pounds</u>		<u>US dollars</u>	
		%		%
Central administration	341 000	8	1 022 204	34
Governorates and local services	1 066 890	27	972 400	40
Production and distribution	281 270	7	440 000	14
Training	394 020	10	610 500	20
Research and evaluation	721 600	19	-	0
Mass media and public education	1 171 830	29	-	0
TOTAL	3 976 610	100	3 045 104	100

The budget planned for 1984 is attached as attachment 5.

\* a more detailed version of this table is given as Attachment 4

The project budget as proposed by the original grant agreement is as follows:

(US \$000)

Y E A R

INPUTS	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>ALL</u>
<u>D</u>						
<u>Operational costs</u>						
Honorariums	26	8	7	5	3	49
Staff Office	46	43	37	28	16	170
Direct Training	12	22	1	---	---	35
Incentives	<u>75</u>	<u>788</u>	<u>678</u>	<u>521</u>	<u>300</u>	<u>2 361</u>
Sub-total	<u>159</u>	<u>861</u>	<u>723</u>	<u>554</u>	<u>319</u>	<u>2 616</u>
<u>Program costs</u>						
Technical Assistance	848	949	1 300	1 073	700	4 870
Participant Training	140	17	19	---	---	176
Equipment & Commodities	962	2 738	1 360	3 086	5 160	13 306
Other Local Costs	622	978	533	444	386	2 963
Sub-total	<u>2 572</u>	<u>4 682</u>	<u>3 212</u>	<u>4 603</u>	<u>6 246</u>	<u>21 315</u>
Contingency	<u>236</u>	<u>479</u>	<u>340</u>	<u>446</u>	<u>568</u>	<u>2 069</u>
Total AID	<u>2 967</u>	<u>6 022</u>	<u>4 275</u>	<u>5 603</u>	<u>7 133</u>	<u>26 000</u>
<u>E</u>						
<u>Operational Costs</u>						
Honorariums	---	2	5	8	12	27
Staff Office	---	11	24	42	65	142
Direct Training	---	5	1	---	---	6
Incentives	---	<u>197</u>	<u>452</u>	<u>781</u>	<u>1 199</u>	<u>2 629</u>
Sub-total	---	<u>215</u>	<u>482</u>	<u>831</u>	<u>1 276</u>	<u>2 804</u>
<u>Programme Costs</u>						
Personnel	189	1 557	1 911	2 029	2 362	8 048
Commodities	270	520	838	1 243	1 750	4 621
Other Local Costs	<u>80</u>	<u>1 250</u>	<u>57</u>	<u>65</u>	<u>75</u>	<u>1 527</u>
Sub-total	<u>539</u>	<u>3 327</u>	<u>2 806</u>	<u>3 337</u>	<u>4 187</u>	<u>14 196</u>
Total GOE	<u>539</u>	<u>3 542</u>	<u>3 288</u>	<u>4 168</u>	<u>5 463</u>	<u>17 000</u>
Project total	<u>3 506</u>	<u>9 564</u>	<u>7 563</u>	<u>9 771</u>	<u>12 596</u>	<u>43 000</u>

It is clear that the project does not lack funds. Indeed, the financial management problems described indicate the difficulties the project has faced in establishing a management structure for this budget. The group has made recommendations on this aspect. However, no specific recommendation was made concerning the proportion of funds to be allocated to each component of the project.

It will be noted from attachment 5 that for 1984 mass media and public education will get the largest share. Technical activities such as support to the governorates, production and distribution of ORS, and research and evaluation, will receive about the same, but training seems to receive by far the least. In a sense, the group felt that this proportion of resource allocation was reflected in some of the problems that the project was facing, namely that the services components of the project were not able to keep pace with the mass media and public education components.

(b) Supplies and equipment

There appeared to be no problems in this area at central level, but some deficiencies were noted in the health services. The group observed during their field visits that the vehicles that were planned to be given to the CDD coordinators at the governorates had not yet arrived, and that this was impeding the supervisory activities.

(c) Participation of WHO

This participation has been both with the national CDD programme before the inception of the project, and with the project itself. The collaboration of WHO has been in the areas of training, research, ORS production (with UNICEF), and evaluation.

For training, 4 senior Egyptian health officials have been trained in the WHO course for CDD national programme managers (including the outgoing executive director of the project). The WHO course for CDD supervisory skills was field tested in Alexandria in 1983 with 40 participants and faculty from various parts of Egypt. In addition, a number of Egyptian clinicians have been trained over the years by WHO in the clinical management of diarrhoea. Directors of MCH clinics from all over Egypt received one week of clinical training (10 courses in all), at El Shatby Hospital in 1982-1983.

For research, WHO has supported a wide variety of research projects of interest to the national programme. These are listed in Attachment 9.

For ORS production, the WHO/UNICEF ORS production engineer made a visit in 1982 to advise the project and C.I.D. on technical problems associated with ORS production. In 1983, WHO supported a CDD/EPI curriculum workshop for nurse educators at the Alexandria High Institute for Nursing. Participants from 5 nursing schools attended.

With regard to evaluation, WHO is supporting this Phase One review.

For future WHO participation, this will continue in the same areas as those mentioned above. It is likely that the WHO/CDD supervisory skills course will prove very useful for the project for use at governorate, district, and health centre levels.

A specific request that was made to WHO during the course of the review was to conduct quality control testing of the ORS produced by C.I.D. and this will be done as soon as possible. WHO will be willing to continue its involvement in the production of ORS, in conjunction with UNICEF, and, as recommended by the review, the WHO/UNICEF ORS production engineer will make a further visit later this year.

As regards evaluation, WHO is very interested to continue its collaboration with the project in the conduct of such reviews, and in the conduct of cluster sample surveys on diarrhoea mortality and morbidity. For WHO the Egyptian experience is likely to provide much useful information that could be of benefit to other countries who are beginning their CDD programmes.

(d) UNICEF participation

As has already been mentioned, in 1977 the Ministry of Health requested the assistance of UNICEF in supplying ORS packets for the health services. From 1977 until 1981 UNICEF supplied a total of 5 061 750 27.5 gram packets. The results of this confirmed the earlier pilot study on the acceptability and effectiveness of ORS.

In order to launch a countrywide programme for the oral rehydration therapy, the Ministry of Health entrusted the C.I.D. company with the responsibility of producing ORS locally, and requested the technical and

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material assistance of UNICEF, with a view to establishing a production line capable of meeting the country's needs for ORS packets.

In 1981, UNICEF supplied a Merz machine and ingredients for ORS, together with aluminium foil capable of producing 5 000 000 packets per year. Production began in 1982 with a total production for that year of 618 540 packets (27.5 grams). In 1983, 2 275 700 packets were produced, and in 1984 (until April), 1 577 200 packets were produced. This production is ample for the needs of the Ministry of Health facilities.

In mid 1982, UNICEF provided training in El Shatby hospital for health personnel for 7 districts of the six governorates where there is ongoing UNICEF assistance, namely: Aswan, Qena, Sohag, Assiut, Gharbeia and Beheira. Supplies and equipment for the facilities in these seven districts have also been provided.

There has been a recent recommendation from the NCDDP to change the UNICEF packet size from the current 27.5 grams to the 5.5 gram packets. UNICEF will seriously consider this request and start procurement as soon as possible to comply with the NCDDP packet size.

### 3. PROJECT GOALS AND ACCOMPLISHMENTS

The broad objectives of the national programme have been since its beginning in 1977 to reduce child mortality due to diarrhoea by the use of oral rehydration therapy. The NCDDP has an identical objective, with the addition of a target for 1987 that mortality will be reduced in children under 5 years by 25%.

Within the framework of the overall objective of the project, the objectives of Phase One have been described. These are essentially organisational and developmental and do not concern directly the reduction of mortality. Thus, this review does not attempt to measure the mortality reduction already achieved, although it is likely that the project has already made substantial impact. The findings of the recent EPI/PHC evaluation showed that ORT is already widely used (40%) and if this is effective usage, there should already have been an important mortality reduction.

The Phase One objectives to organize a national steering committee and national secretariat, to establish the programme on a test basis in one governorate (Alexandria), and to develop and test feasible strategies and activities for Phase Two, have all been achieved successfully. However, as part of the planning process for Phase One, seven objectives related to its design and implementation were formulated. These may be described as sub-objectives or activity objectives for Phase One:

- to create a strong effective administration
- to establish field coordination and implementation
- to train health professionals in rehydration skills
- to conduct marketing and mass education for rehydration, nutrition and prevention
- to produce and distribute rehydration materials
- to design and sponsor research in support of the NCDDP strategies
- to evaluate progress

The major tasks needed to achieve these sub-objectives were listed for Phase One. The following paragraphs assess the achievements of these targets in terms of task achievement. They were prepared for the review by the NCDDP secretariat.

The Performance of the NCDDP Phase One related to its subobjectives and the tasks required for sub-objective (November 1982 to May 1984):

As of May 31, 1984:

Sub-objective 1: Create a strong and effective central administration:

Tasks:

i. Organise secretariat (hire technical staff, locate in suitable space, design work plans).

ACHIEVED

- however late hirings and false starts delayed achievement until May 1984. Executive Director unable to be full time since July 1983. Salaries are geared to MOH levels and are not competitive for non-governmental professionals.

ii. Develop administrative procedures, and contract management, and implement plan for vehicles

PARTIALLY ACHIEVED

- a weak link: there were serious delays in contract negotiations and payments. The project lacked an office administrator until recently. The plan for vehicles is not yet implemented.

Sub-objective 2: Establish coordination and implementation of NCDDP efforts in the field and with other organisations.

Tasks:

i. Establish an ORT coordinator in each governorate to organise training sessions, help establish rehydration centres and distribute materials and send back data

PARTIALLY ACHIEVED

- some coordinators are less active than desired. The work plan was never put into effect.

ii. Establish major hospital rehydration centres at university, teaching and central hospitals of governorates.

ACHIEVED

- only one centre existed in November 1982, now there are 12.

iii. Cooperate with international groups  
(ie.: host visitors from other countries, present  
papers at international meetings, plan for tours  
of other national CDD programmes)

PARTIALLY ACHIEVED

- international tours still in planning stage.

iv. Provide technical information services  
(library, distribution of key articles,  
publication of technical newsletter, holding  
of seminars and conferences)

ACHIEVED

ONGOING

Sub-objective 3: Train health professionals in rehydration skills.

Tasks:

i. Develop coordinated training plan with  
objectives, curriculum, target groups,  
recruitment schedules, and followup  
- just now underway.

NOT ACHIEVED

ii. Create manuals, posters, physician's training  
film and slide sets.

PARTIALLY ACHIEVED

The Training film and nurses manual are postponed to  
Summer 1984.

iii. Train physicians and nurses at major  
rehydration centres and followup on this  
training

PARTIALLY ACHIEVED

- recruitment has been uncoordinated and there  
has been little post-training followup or support.  
50% of physicians go on to do ORT. Nurse  
training is unsatisfactory on many counts.

iv. Do research for a prototype training scheme  
for mothers (diagnosis and mixing of ORS)

ACHIEVED

- while quite effective and not costly, the  
likelihood of widespread adoption is uncertain.

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Sub-objective 4: Conduct marketing and mass education for rehydration, nutrition, and prevention.

Tasks:

- i. Do market research (language concepts, attitudes, home environment related to ORT) among mothers and health professionals  
-extensive ethnographic research nearly complete.  
ACHIEVED  
ONGOING
- ii. Define ORS product: packet size, name, logo, price, and method of distribution  
- there is a need to study alternatives: premixed solution, citrate formula, rice powder formula.  
ACHIEVED
- iii. Develop message testing (focus groups, intercepts, surveys)  
ACHIEVED.
- iv. Develop basic messages and modalities for broadcast (TV, radio, public meetings, print and billboards)  
ACHIEVED
- v. Evaluate media campaign for phase one  
- highly successful.  
ACHIEVED
- vi. Plan for 1984 media campaign started late  
by two months.  
ACHIEVED  
ONGOING

Sub-objective 5: Produce and distribute rehydration materials.

Tasks:

- i. Produce prototype packet, distribute in Alexandria governorate, evaluate  
- distribution by state pharmaceutical firm less than ideal and late.  
PARTIALLY ACHIEVED

- |   |                      |
|---|----------------------|
| ii. Determine requirements for ORS nationally annually.<br>- initial estimates, determined epidemiologically, to be reviewed late 1984.                                   | ACHIEVED<br>ONGOING  |
| iii. Contract for adequate ORS production for 1984<br>- bureaucratic delays will cause shortfall during diarrhoea season.   | PARTIALLY ACHIEVED   |
| iv. Plan for efficient national distribution<br>-contract with private sector pharmaceutical distributor.   | ACHIEVED<br>ONGOING  |
| v. Develop, procure, and distribute standard rehydration centre rehydration materials (200 cm <sup>3</sup> cups, mothers' seats, scales, needles, nasogastric tubes, etc) | ACHIEVED<br>ONGOING. |
| vi. Research and produce standard poly-electrolyte IV fluid   | ACHIEVED.            |
| vii. Develop 1985 production plan   | ACHIEVED<br>ONGOING. |
- Sub-objective 6: Design and sponsor research in support of NCDDP strategies.

Tasks:

- |   |                     |
|---|---------------------|
| i. Sponsor clinical research (drugs, feeding, ORT trials, composition of home fluids etc)<br>- sponsorship establishes inter-programme links, strengthens rehydration centres, grooms future professors, and provides answers needed for decision making. | ACHIEVED<br>ONGOING |
|---|---------------------|

- ii. Sponsor epidemiologic research (morbidity and mortality, patterns of illness, ORT requirements, seasonality) ACHIEVED  
ONGOING.
- iii. Sponsor ethnographic research. ACHIEVED  
ONGOING.
- iv. Sponsor applied research (mixing trials, lay deliverer feasibility, training methods, cost of care, etc). ACHIEVED  
ONGOING.
- v. Publish majority of findings in NCDDP newsletter and/or international journals ACHIEVED  
ONGOING.
- Sub-objective 7: Evaluate the progress and outcomes of the campaign.
- Tasks:
- i. Develop overall evaluation framework and build in ongoing evaluation into each programme component ACHIEVED.
- ii. Organise national evaluation scheme for 1984 - delays in contracts negotiations. PARTIALLY ACHIEVED
- iii. Retrieve official local and national statistics - not always available timely or accurate. PARTIALLY ACHIEVED
- iv. Develop sentinel sites for micro-evaluation of NCDDP strategies ACHIEVED.
- v. Support evaluation with state-of-art micro computer with statistics software ACHIEVED.

For the future, the group noted that there was a slight discrepancy between the planning process outlined in the summary table above and the evaluation framework presented to the group for 1984 (NCDDP document: 1984 - Framework for Evaluation).

The planning process appears to take the overall objectives, and then define objectives for Phase One, and then break these down into sub-objectives. Each sub-objective has a series of tasks or activities required for its achievement. These tasks were quantified for Phase One to permit easy evaluation, such as that represented by the above.

The evaluation framework proposed uses as its starting point the same overall objectives, but appears to use a different approach to developing evaluation indicators. When planning for Phase Two, a common planning and evaluation framework would seem to be desirable.

With regard to the status of planning for Phase Two, the evaluation framework for the year 1984 has been prepared as mentioned above. The objectives for Phase Two are:

#### Training

All hospitals, health centres, health units to have an active rehydration unit.

90% physicians and nurses caring for children to be aware of oral rehydration therapy.

100% of inpatients, 90% of outpatients receive proper rehydration and nutrition education.

Training manuals and curriculum dispensed and used at nursing, medical schools and post-graduate training.

#### Production

At least 40 million 5.5 gram packets produced annually (amended post evaluations). Alternative product presentations evaluated.

ORS available at 100% of pharmacies and health outlets.

#### Research

Discover cost-effectiveness delivery systems.

Provide full epidemiologic analysis (including microbiology) of diarrhoeal diseases.

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Research alternative compositions to ORS (including super ORS).  
Research feasible steps in prevention (including study of possible vaccines).

Mass Education

Conduct full mass media campaigns annually and evaluate.

Outcomes

Reduce under three mortality from diarrhoeal diseases by at least 25%.  
Impact on infant nutrition.  
Establish cost-efficiency analyses.

4. TRAINING

A considerable number of health personnel were trained by the national CDD programme before the start of the project. The project itself has also been active in training of health workers.

The project has concentrated on training of health workers in the treatment of diarrhoea, that is to say rehydration therapy, with the emphasis on oral rehydration therapy and proper feeding during diarrhoea.

The approach taken by the project to training in rehydration therapy has been as follows: In addition to supporting the training centre El Shatby Hospital, the project has helped establish eleven new rehydration treatment and training centres as of May 31 1984. These centres are:

1. Abu El Reesh Hospital, Cairo
2. Tanta University Hospital, Gharbia
3. Bab El Shaareya Hospital, Cairo
4. El Hossein University Hospital, Cairo
5. El Galaa Hospital, Cairo
6. Om El Masryeen Giza Central Hospital, Giza
7. El Ramle Paediatric Hospital, Alexandria
8. El Kebari Polyclinic Hospital, Alexandria
9. Sidi Bishr Polyclinic Hospital, Alexandria
10. Mansoura Fever Hospital, Dakahliya
11. Aswan General Hospital, Aswan

For these rehydration treatment and training centres, a cadre of trainers was built up. To do this training experts furnished through the project conducted one week training courses consisting of intense practical experience and demonstrations led by an expert. This was found to be sufficient to give staff confidence to operate a rehydration programme.

Following this a programme of training of physicians and nurses started at the established training centres. The table that follows summarizes the training given by the project to date:

<u>Category of personnel</u>	<u>Place</u>	<u>Date of training</u>	<u>No. trained</u>	<u>Subject</u>
Physicians	Abu El Reesh ) El Shatby ) Bab Al Sharia )	1983/84	320	rehydration 6 three-day courses
Physicians	Abu El Reesh ) El Shatby )	1983/84	196	rehydration one week
Nurses	Fom El Khaleeg ) NCDDP & ) Om El Masryeen	1983/84	461	rehydration 6 days
Directors of pharmacy sections of governorates	NCDDP	1983/84	29	rehydration
Pharmaceutical sales representatives	NCDDP	1983/84	8	rehydration

As a result of these training programmes many MCH and urban health centres and rural health units around the country provide active ORT services on site.

In addition to training of health workers, the project has made considerable efforts to develop and produce appropriate training methods for mothers. An experiment in which over one thousand mothers received training at Bab Al Sharia Hospital is currently being evaluated. The mothers were trained in the diagnosis of dehydration and the preparation and administration of ORS:

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The training is done in the rehydration centre, and is done after their children have been rehydrated. The training is done in groups of 4 to 8 and lasts about one hour. The evaluation, now being done suggests that mothers retain the information for a period of several months, and also pass on the information to neighbours.

The project has conducted conferences and seminars for audiences of specialists, general practitioners, nurses, and pharmacists in 8 governorates. A total of 8 such meetings have been held and from about 50 to 200 staff attended each meeting.

The training materials developed by the project in Phase One consist of:

- treatment charts in Arabic and English
- a treatment brochure in Arabic
- a brochure for pharmacists
- a standard teaching slide set with accompanying lecture notes
- an illustrative sequence (on slides) of ORT in a child
- the first issue of a newsletter (second due July 1, 1984)
- a nurses' self-instructional manual
- a video film on ORT featuring four eminent paediatricians
- numerous reprints from world literature

##### 5. PRODUCTION AND DISTRIBUTION OF ORS, AND OTHER REHYDRATION MATERIALS

The national CDD programme and the project use the WHO-recommended formula for ORS. Two packet sizes are currently in use: the 27.5 gram packet for 1 litre supplied by UNICEF and produced by the C.I.D. company on behalf of UNICEF and a second packet size of 5.5 grams for 200 ml produced by the C.I.D. company under the brand name Rehydran.

At present the C.I.D. company is the only local producer of ORS. It is planned in 1984 to tender for bids for ORS production in an effort to interest other companies in producing ORS.

ORS supplies: production in 1983 and future plans

<u>Source</u>	1983	1984	1985	1986
National production:				
27.5 gram packet UNICEF	2 000 000	2 000 000	1 500 000	1 000 000
5.5 gram packet UNICEF	-	-	10 000 000	10 000 000
5.5 gram packet	617 600	1 750 000	to be discontinued	
Rehydration				
5.5 gram packet for	100 000	16 000 000	35 000 000	45 000 000
NCDDP				
Total 27.5 gram packets	2 000 000	2 000 000	1 500 000	1 000 000
Total 5.5 gram packets	6 276 000	17 750 000	35 000 000	45 000 000

The current stock held at central level is 750 000 packets of 27.5 grams. At present there is a shortage of the 5.5 gram packet and there is no stock available at central level. Production of the latter will be accelerated as soon as possible. The aluminium foil needed for the production of the 5.5 gram packet has now arrived in Egypt and will be sent to the CID Company as soon as possible.

Shipments are made to the governorates twice a year on request. In 1983, 1 870 000, 27.5 gram packets were distributed to Ministry of Health facilities, and 6 276 000 packets of the 5.5 gram packet were distributed through the private pharmacies. There appeared to be no storage problems at any level of the services for the ORS distributed to the health facilities. The packets are stocked in the Central Government Pharmacy, and distributed through its normal distribution system.

The review group received no reports of spoilage or deterioration of the packets, although it was reported that the lorries that distribute drugs often have very high temperatures in their cargo compartment.

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The team that conducted the field visit in Cairo also visited the C.I.D. factory. Their findings were as follows: the aim of the visit was to find out the current status of production for both the Rehydran and the UNICEF packets.

The visit revealed that there was a surplus of UNICEF packets (27.5 grams), and a shortage of the Rehydran packet (5.5 grams). The UNICEF packets are given free of charge to the patients via the health facilities, whereas the Rehydran is sold for LE 0.450 per ten packets.

Rehydran is at present being produced on two Rovema machines. In May 1984, the capacity of these machines was 1 250 000 packets per year. The C.I.D. had procured four more Rovema machines and by the end of 1984 would have a production capacity of 17 750 000 packets for 1984. With six machines operating, the monthly production capacity for Rehydran according to the director of the company would be 2.5 million packets a month, or 30 million packets per year.

The Merz machine provided by UNICEF together with the ingredients and foil required to produce the 27.5 gram packet is capable of producing 5 million packets per year. As of the first of May 1984, there is a surplus stock of 680 000 packets, and there are enough ingredients available to produce a further 5 million packets. Furthermore, there has been the request from the NCCDP to discontinue the use of the 27.5g packet in favour of the 5.5 gram packet.

There are thus several issues to be resolved by the project with the C.I.D. company and UNICEF. Firstly, the timing of the discontinuance of the 27.5 gram UNICEF packet to ensure the existing surplus and the available ingredients are not wasted. Secondly, how to ensure that the production capacity for the 5.5 gram packet can be increased. It should be noted that even with all six Rovema machines operating there will still not be enough production capacity to meet the estimated need of 35 million packets in 1984.

Thirdly, if the Merz machine is to be adapted to production of 5.5 gram packets, then some spare parts will be needed and a continuing supply of foil (different from that used on Rovema machines).

With regard to the uses of intravenous fluids, the project has completed a research study to identify a common rehydration fluid for intravenous use. This solution, whose use will be endorsed by the Ministry of Health, will be produced by the El Nasr company and distributed to hospitals.

The study conducted by the project recommended the adoption for national use of a single poly electrolyte intravenous fluid with the following composition:

mMol/litre: Na<sup>+</sup> 90: K<sup>+</sup> 15: acetate 40: Chloride 65: and glucose 111.

#### 6. THE TREATMENT OF DIARRHOEA:

The project has established a treatment policy for Egypt. This policy is based on the previous experience of the national CDD programme, and also the research studies carried out by the project in Phase One. The treatment policy may be summarized as follows:

Home treatment: at the onset of diarrhoea, before it becomes watery, the mother is advised to increase the amount of fluids given to the child using any home available fluid. No specific recommendation on the best type of fluid has yet been made. In cases of watery diarrhoea the mother is advised to obtain and use ORS. The use of salt and sugar solutions made up by the mother in the home is not part of the treatment policy.

If the diarrhoea continues, becomes watery or the child is dehydrated, the mother is advised to seek care from the health services where the child will be given ORS. If the mother is already aware of ORS and knows how to use it she may start treatment with the ORS immediately, if she has the packet available or can purchase from a pharmacy. The same criteria apply for referral for medical care. The mother is advised to continue breastfeeding the child during the diarrhoea where appropriate, and to continue feeding the child as soon as possible when appetite returns.

Treatment by a health facility: oral rehydration therapy is used as the initial treatment unless the child is severely dehydrated or there are other indications for intravenous therapy.

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The project's guidelines on the organization of rehydration centres and management of diarrhoea by health workers is being prepared, as is a training film. In addition, a treatment chart has been prepared (Attachment 6).

Antidiarrhoeal drugs are not advised for treating children, and antibiotics are only used when there is a specific indication to do so. In view of the importance of ensuring that all sectors receive a standard message on diarrhoea treatment, it is important that a guideline be issued by the project as soon as possible.

In terms of problems concerning the project's treatment policy, it was reported to the group that it was not yet fully accepted by a minority of health workers. Especially important is the fact that the policy is not yet accepted by a number of paediatricians.

The review group noted that the policy stresses the early use of ORS, starting if necessary in the home, and this has very important operational implications for the project inasmuch as mothers and pharmacists will need to know the correct use of the salts.

Another concern expressed by the group was the fact that the C.I.D. company markets an antidiarrhoeal drug with the brand name Entocid. This is a powder containing among other things enterovioform and sulphaguanidine. The powder is packaged in an identical packet to that of Rehydran, except that the label is a different colour. When selling this product it was observed by the group that pharmacists advise mothers to dissolve the powder in a little water. The possibility of confusion with the use of Rehydran seems inescapable.

There are a large number of antidiarrhoeal preparations available on the market. These preparations usually contain antidiarrhoeal drugs and antibiotics.

The preparations most commonly available for the treatment of diarrhoea on the commercial market are: Diapec syrup, Nimarol syrup, Enterovioform tablets, Entocid powder, Entocid tablets, Pectal syrup, Diamycin syrup, Diacan syrup, Enteroguanil, Flagyl tablets and syrup, Lomotil tablets and syrup, Streptophenicol syrup and capsules, Imodium drops.

The companies producing pharmaceuticals in Egypt are as follows: Arab Drug Co., Alexandria Co., Chemical Industries Development Co., Nasr Co., the Nile Co., Kahira Co., Memphis Co., Misr Co.

International companies producing in Egypt are: Hoechst Orient, Pfizer, Egypt, Swiss Pharma (Ciba-Geigy, Sandoz, Wander), Squibb - Egypt.

Two other companies are importers of pharmaceuticals: Egydrug and El Gomhoria.

#### 7. OTHER CDD INTERVENTIONS (MATERNAL AND CHILD HEALTH, AND ENVIRONMENTAL HEALTH)

The project is focussing on the use of rehydration therapy as the main way of achieving its overall objective. Thus the use of oral rehydration therapy is the mainstay of the project. Other MCH practices related to this are strongly promoted such as breastfeeding and proper feeding during diarrhoea.

With regard to environmental sanitation, the project has not yet involved itself in this area. Potentially useful diarrhoea morbidity reduction interventions such as handwashing, domestic and food hygiene, the proper use of water and toilet facilities, have not yet been introduced as programme component. As mentioned later under research, future activities in the areas of MCH and environmental sanitation will be studied to determine those interventions most likely to have an impact in the Egyptian setting.

The Government of Egypt is making massive efforts to introduce adequate and pure water supplies and sanitation, to all parts of the country.

#### 8. COMMUNICATIONS SUPPORT (MASS MEDIA AND PUBLIC EDUCATION COMPONENT)

The project has made a major investment in this component with very important, even dramatic, results. This is therefore one of the major issues addressed during the review. A brief summary of this component follows.

The NCDDP Phase One mass media and public education component activities were limited to Alexandria governorate with the exception of one element, television, which had to be used on a national level, since Egypt does not have local TV broadcasts (there are two national channels each covering the entire country).

The communication strategy identified two distinct target audiences: health professionals and the general public. Each of these categories includes its own sub-audiences, with variations in education, specialization, and needs. Socioeconomic characteristics need also to be considered.

The Alexandria pilot campaign produced and disseminated specific messages aimed at promoting ORT. For health professionals, the emphasis was more on print media and person to person communication. For doctors, a treatment chart was developed that explained the correct signs, appropriate type and place of treatment, and the different degrees of dehydration. A newsletter containing relevant essays by leading Egyptian paediatricians was developed and circulated to doctors in the context of the pilot campaign.

A booklet was developed for nurses, and a pamphlet was distributed to pharmacists so that they could correctly advise mothers. The campaign for the general public (especially mothers) utilised different media to diffuse the following specific ideas and information:

- give plenty of liquids (especially soups and juices) and continue breastfeeding your child if he or she has diarrhoea;
- watery diarrhoea and gastroenteritis cause dehydration which can lead to the death of the child;
- recognize the signs of dehydration: weakness, vomiting, high temperature, loss of appetite and sunken eyes;
- take your child immediately to a hospital which has a special unit to treat dehydration if you recognize any of the signs of dehydration (the names of particular hospitals in Alexandria were given)
- continue to feed your child if he or she has diarrhoea.
- the advantages of using ORS were conveyed in the messages as well as where to obtain it and illustrations of its effectiveness.

This information was conveyed in a multi-media campaign utilizing radio, TV, group communication, and outdoor media (billboards, posters, stickers, and flyers), and a small scale use of the press. Radio and television reached more people than any other medium. Of the two television was far more effective.

The NCDDP sponsored a daily 15 minute programme which utilized various formats, including interviews with mothers, doctors, drama, songs, prize competitions. Television used two commercials, and was innovative in having a very well-known entertainer and professor of paediatrics together in a commercial. This was the first time that this had happened on Egyptian TV.

The results of the campaign: television was used nationally, but not by choice. Alexandria, the test market had no local TV station, so TV messages had to be tested on a national scale. The project was aware that ORS was not freely available in the pharmacies, and so the commercials advised mothers to obtain ORS from health units and hospitals. Pharmacies were not mentioned as a source of ORS.

Radio and television (particularly the latter) had a very powerful impact on knowledge and practice for ORT. Based on survey data collected in Alexandria, before and after the pilot campaign, awareness of dehydration rose from 32% of mothers to 87% (including awareness of ORS). The percentage of mothers mentioning ORS in the treatment of dehydration rose from 1.5% before the campaign to 51.4% after the campaign. Likewise, the percentage of mothers knowing that breastfeeding should continue during diarrhoea rose from 3% to 64.6%. The most important change perhaps was that use of ORS rose from 1% to 36.2%.

During the review, the group found that the impact of the television campaign had been equally powerful in all the governorates visited. In upper Egypt, the team that visited Qena governorate found that the majority of people asked, both public and professional, and both fathers and mothers, had either seen the commercials or heard about them, and also knew that ORS was used in the treatment of diarrhoea.

The implications for the project of the success of the TV campaign nationwide are important. With the summer season of diarrhoea approaching in 1984, and the raised expectations among the public generated by the campaign, the project will be in a near emergency situation to ensure that the services are available and that sufficient ORS is also available.

At the same time, the momentum of the campaign should not be lost. It is important, however, that the services have a chance to catch up so that the public will not be disappointed. It is also important that the messages be reinforced so that ORS is effectively and correctly used by the public. If not, then there may be dissatisfaction, either because the treatment is not effective, or that there is a risk of side effects with improper use of ORS.

## 9. SURVEILLANCE AND EVALUATION

### (a) Routine Reporting

The reporting system of the Government health services provides information on diarrhoeal cases and deaths by age group, although this information is not regularly available to the project staff at central level.

It was reported to the review group during their field visits that the normal system of reporting did not give an accurate estimate of actual diarrhoeal cases as many of these did not use the Government services. Three of the teams visiting governorates mentioned the need for accurate reporting. One team (Cairo) mentioned that such statistics were lacking. One team (Dakahliya) mentioned that health personnel need to be aware of the value of effective reporting, and one team (Qena) found good information was available at all levels but that this information was not being used.

It is also well known that diarrhoea deaths are underreported and a figure of 33% underreporting has been given by one source (CAPMAS survey 1974-75).

The service units, hospitals and health centres report on a monthly basis to the district health offices. These in turn report to the governorate health offices. It was the impression of the review group that there was incomplete reporting in some governorates, and inadequate reporting to the central level. analysis of available data at each level seemed to be inadequate.

It is noted that supervision of reporting is one of the functions of the governorate NCDDP coordinators and that these staff are therefore responsible for the transmission of reports to the project at central level.

There appears to be no regular feedback of information to the various service levels, although the Newsletter serves this function to a certain extent. Again the function of the governorate project coordinators is

stressed in this regard.

(b) Project reporting

Apart from the routine reporting system the NCDDP has established a simple reporting system for the service units that are operating under the project. This is based on a project register that is used in each ORT room or centre. An English translation of the form used is given in attachment 7. This register is used in well over 50% of health centres of all types, although its use in hospitals is less. This register permits accurate reporting of diarrhoea cases and treatment with outcome.

(c) Annual Diarrhoea Mortality and Morbidity

These data are best obtained from special surveys at different levels. They indicate an under 5 death rate from diarrhoea of about 20 to 25/1000 and an under 3 death rate of about 30/1000, within the last five years (see page 8, references). Point prevalence rates in summer range from day prevalence of 33% in rural Egypt to 15% urban. The rates are one half to one third of this in winter (unofficial NCDDP data, Taxnoy study).

The project has collected a large amount of epidemiological data from various studies and sources, and has thus been able to make up a fairly complete picture of the situation in Egypt. The review group referred constantly to the document provided by the project: 'Epidemiology of Diarrhoeal Diseases in Egypt'. Selected tables from this document are given in attachment 8.

(d) Sentinel Surveillance

The project has established a several sentinel reporting areas in a longitudinal study of 5 000 to 6 000 children from rural and urban Egypt and this provides data on prevalence, severity, mothers actions, and outcome. The sentinel reporting areas are in seven governorates.

(e) Special Studies

The need for accurate mortality, morbidity, and ORT data has already been mentioned.

For the future, the project intends to conduct a series of double round cluster surveys to provide accurate baseline data, and also to permit monitoring directly of the mortality reduction target of the project.

This survey will be done in two rounds, covering children under 3 years in selected areas. Children will be identified during the first round in June at the start of the diarrhoea season, and then followed up after the summer and winter diarrhoea season in a second round in January.

The project will use an adaptation of the cluster sample method used by the WHO CDD programme. The adaptations introduced are to have a much larger number of clusters: 175 instead of 30, and a larger sample size: 10 500 children. There will also be a narrower age group: children under two years instead of under five years. Furthermore, two subclusters will be selected for each cluster.

The survey will provide information on diarrhoea morbidity, child mortality (all causes), breast feeding, and the use of ORS. Additional information will be obtained on the educational level of the mother and water supply available to the family.

## 10. EVALUATION

The evaluation framework for the project has already been mentioned. This framework has been devised to evaluate the activities of the project to the end of 1984. The framework has set targets for activity accomplishment for 1984, and the way in which the information is to be obtained is described.

The review group was impressed with this approach but suggest that some of the targets may need to be revised in the light of the results of the review.

## 11. RESEARCH

This component of the project has been active from the beginning and has served a very useful purpose in providing the project with essential planning and operational information. It is a notable feature of the project that its major decisions could be made quickly and with research information to back them up. The review group is very conscious of the importance of such research for the future of the project and has made specific recommendations on possible priority areas for research.

The research carried out through the project has been carried out in the following areas:

- epidemiology: the longitudinal study covering sentinel areas in seven governorates.
  
- applied research: on operational topics: such as the chemical composition of home prepared fluids; study of containers available in the home; identification of a single poly-valent IV solution; the amount of ORS needed to rehydrate children in hospital rehydration units; use of ORS in neonates with diarrhoea; health education of children and its effect on siblings; the role of antiemetics in ORT; milk feeding after rapid rehydration; teaching mothers how to mix ORS; mixing of ORS studies.
  
- sociocultural research: the Sohag study for depot holders, to identify local people who could deliver ORS on a domiciliary basis; the media habits of Egyptians in Alexandria; message testing and evaluation of the media campaign; focus group studies with mothers to identify the logo, the colour and shape of the ORS box; emotional attitudes and concepts with respect to diarrhoea; anthropological studies on illness and care concepts.

The studies supported by WHO have not been through the project, but directly to the requesting agencies. The topics for research that have been funded include: aetiology of diarrhoea, comparison of salt/sugar packets with the full formula packet, the effect of antibiotics on the duration and severity of diarrhoea, and feeding practices on diarrhoea.

A list of studies carried out by the project or sponsored by it is attached together with the list of WHO funded projects to date (see attachment 9).

ATTACHMENT 1

Background data to Health Care System of Egypt

1. General information

Egypt occupies the north eastern corner of Africa. It is bounded in the north by the Mediterranean Sea, in the south by the Sudan, in the east by the Red Sea, and in the west by Libya.

The total area of Egypt is 1 002 000 sq. km with only 35189 sq. km inhabited. The coastline has a total length of approximately 3000 km, of which one third fringes the Mediterranean.

Egypt may be divided into three major geographical regions, namely: the Nile Valley, the Eastern Desert, and the Western Desert.

The Nile Valley runs through the desert and mountains of Upper Egypt and then divides into two and runs through the delta region of Lower Egypt - one of the most fertile regions in the world.

The Eastern Desert comprises the northern part, a coastal strip where water is abundant because of heavy rainfall, a dry central plateau, and a steep rocky high area in the southern part. A southern zone of the Eastern Desert stretches along the coast of the Red Sea and is rich in minerals.

The Western Desert extends from the Nile Valley in the east to the Libyan frontier. The northern part of this region contains the northern plateau region, the Great Depressions and the oases of Siwa, Wadi El-Natroun, and Baharia. The southern part of the region contains the oases of Farafra, Kharga, and Dakhla.

2. Demographic information

Population: Approximately 46 million (1983); expected by the end of 1984: 48 million.

Urban 44 per cent; rural 56 per cent.

Number of children under 5 is 15 per cent or 6.9 million (1983).

Number of children under 3 is 10 per cent or 4.6 million (1983).

Habitable land: 4 per cent.

Population density: (in habitable regions) 2 400 inhabitants per square mile.

Percentage of labour force in agriculture: 44 per cent.

Percentage of labour force working abroad: 14 per cent.

Adult literacy rate: 47 per cent (1981-1982).

Per capita Gross National Product: LE 470 (1981-1982).

### 3. Vital statistics

Crude Birth Rate:	38.5 per 1000 (1981-1982)
Crude Death Rate:	10.5 per 1000 (1981-1982)
Infant Mortality Rate:	76 per 1000 live births (1981-1982)

### 4. The health services\*

#### (a) Health policy and strategy

The Egyptian Constitution, Article no. 16, states that every citizen has a right to receive adequate educational, social and health services. The national health goals are stated as follows:

1. Full coverage by health insurance in 1990.
2. Support for the public sector, and encouraging the private sector in the drug industry.

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\*This section is based on the Ministry of Health document: Country Programme Statement: Egypt, 1983

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2. Demographic information

Population: Approximately 46 million (1983); expected by the end of 1984: 48 million.

Urban 44 per cent; rural 56 per cent.

3. Upgrading the health facilities and the performance of family planning to solve the population problem.
4. Raising the efficiency of preventive health services with first priority to immunization, environmental sanitation, food hygiene, and early detection and treatment of endemic diseases, particularly bilharziasis.
5. Strengthening curative services with first priority to emergency medical services (E.M.S.) and intensive care.
6. Upgrading health resources through efficient continuous education and training to all medical and paramedical personnel.
7. Developing capable health information systems in support of the managerial process of the health sector at the central and local levels.

(b) Highlights of the health sector

- the Ministry of Health is the only organised provider of free health care for all portions of the population.
- only the Ministry of Health deals directly with preventive health, while other ministries play prevention related roles concerned with potable water supply and sanitation.
- all faculties of medicine and training institutions are free and open to a very large intake of students.
- subsidised systems exist of low cost medical supplies and pharmaceuticals distribution; prices are controlled on non-subsidised drugs.
- almost all physicians engaged in private practice are employed members of a salaried curative and preventive health care establishment.
- a relicensure system is developed to review and certify private health establishments.

- the emphasis in the profit oriented private sector is on curative care and the pharmaceutical industry.
- the indicators for the death rates, morbidity rates and life expectancy at birth have shown a significant improvement of health status during the past thirty years.

(c) The Ministry of Health (1983 statistics)

The Primary Health Care Level:

- is predominantly preventive with some curative services.
- is provided through various types of facilities, with or without beds.
- is integrated in rural areas.
- is still fragmented in urban areas, but the policy is towards integration.

The Rural Health Units: (1967 units)

These are characterised by the following:

They are the main front line and first contact points of the service. Care is free of charge. Each unit is staffed by: 1 physician (general practitioner), 2 nurses, 1 sanitarian, 1 assistant sanitarian, and 1 laboratory assistant. Some units also have dentists.

The following activities are carried out by rural health units: MCH care, communicable disease control, endemic disease control, environmental sanitation, health education, curative medical care and emergency medical services (EMS), and vital events registration.

There is on average one rural health unit to 9000 population. The physician in charge is compelled to serve for one year. In rural areas he is allowed to charge a modest fee for housecalls when off duty.

The Rural Health Centres: (556 centres)

These centres have the following staff: 2 doctors, 1 dentist, 1 laboratory technician, 1 chief nurse, 6 nurses, 1 sanitarian, and 1 laboratory assistant.

Each centre has an average of 15 beds. The total beds available for all units is 7584. A centre serves one to three smaller villages surrounding the central village where it is located. The centres provide a similar range of services to those offered by the Rural Health Units, with in-patient facilities in addition.

Rural Health Hospitals: (50 hospitals)

These are found in communities with populations of at least 20 000. They contain 30 to 50 beds (total beds available 1377) and are staffed as follows: 1 surgeon, 2 general practitioners, 1 dentist, 1 pharmacist, 1 sanitarian, 1 laboratory technician, 1 radiology technician, 1 chief nurse, and 8 nurses.

Urban Health Centres: (78 centres)

Each centre serves an urban population of 25 to 50 000. They are staffed with 1 general practitioner per 5 000 population on average, and each is responsible for a different activity, eg, outpatients, MCH, school health, control and prevention of communicable diseases, health education, and environmental sanitation. The centres operate integrated health programmes oriented to the communities they serve, and include the same services as provided in rural health centres.

Urban Maternal and Child Care Centres. (242 centres)

Each centre serves an urban population of 75 000 on average and contains 5 to 10 beds. The centres provide medicine and treatment free. The staff are as follows: 1 physician usually a MCH specialist, 4 nurse midwives, 3 orderlies, 1 pharmacist, 1 dentist, 1 nutritionist, and 1 laboratory technician.

School Health Units (158), Polyclinics (115), and School Health Hospitals (5).

For these facilities there are in general: 1 school health physician per 4000 children, and 1 school health visitor per 1000 children. These staff have the following tasks: immunisation, early detection of cases, first aid, surveillance of environmental conditions, health education, screening and health recording.

#### Health Bureaus in Urban Areas (365 bureaus):

These serve populations of approximately 60 000 and are headed by a physician with support staff. The centres concentrate upon food quality control, sanitation, immunization, and vital statistics.

#### Secondary and Tertiary Care.

#### District Hospitals (141 hospitals):

One hospital is situated in the main town of each district having a population of between 50 and 100 000. Each hospital has an average of 100 beds (total beds available for all district hospitals: 13783).

The minimum speciality services provided are: general surgery, general medicine, obstetrics and gynaecology, paediatrics, anaesthesiology, urology, ophthalmology, and EMS. Many hospitals have other specialities available.

The staffing of district hospitals varies with the size and functions. Each hospital has a governing board. The hospital director is accountable to the health director of the district.

#### Governorate Hospitals (37 hospitals):

There is one such hospital in each governorate capital, and the population served varies from 150 000 to 500 000. The hospitals contain from 200 to 500 beds (total beds for governorate hospitals: 8857).

A full spectrum of medical care and speciality services are available including EMS.

Each hospital has a governing board and the hospital director is accountable to the health director of the governorate.

Other Specialised Hospitals and Clinics (total beds available: 25869).

These include special hospitals such as mental, fevers, chest diseases, endemic diseases, ophthalmic, leprosy, rabies, and obstetric and paediatric hospitals. There are varying standards and scales of staffing and facilities available.

(d) Ministry of Health Organisation and the General Directorates in the Governorates.

An organisation chart of the Ministry of Health is given at the end of this section.

Egypt comprises 26 governorates, 20 large cities (population over 100 000), 150 districts, and 4040 villages. The planning process originates at village, district, and governorate levels. At the governorate level, health plans are grouped and adjusted. They are then adjusted and then passed to the Director General of Health Planning of the Ministry of Health where they are coordinated and adjusted according to the priorities which emerge as a result of reconciling the various plans of each of the directorate generals of the Ministry of Health. Finally, all must be brought into harmony with what the Minister of Health heading the Health Board may wish to adopt as policy, and with the overall policies adopted by other ministries such as the Ministry of Economy, the Ministry of Finance, and the Ministry of Planning.

Once these various adjustments are achieved, then the governorates are informed about the status of the plans, and they are asked to proceed with implementation.

All administrative responsibilities rest with the governorate and some are likewise transmitted to the districts.

The Ministry of Health has the following general activities operating under the supervision of undersecretaries: each undersecretary is responsible for a group of general directorates and departments within the broad area of his programmes. The main areas are: planning for the services, organisation, studying and specifying levels of performance, surveillance and evaluation, planning and execution of research and training programmes, health education, development and issuance of health laws and decrees following National Assembly and Presidential approval, execution of health programmes for

national emergencies, management of international assistance.

(c) Health manpower

Physicians: 32 000 (1977)  
4 000 graduating per year  
22 000 employed by the Ministry of Health  
4 000 in full time private practice  
75 - 80 per cent of active urban physicians devote time  
to fee for service practice after their MOH obligations  
are met.

Physician to population ratio expected in 1982: 1 : 1 000

Nurses: 35 000 (1977)  
4 000 graduating per year  
23 000 nurses of various levels practicing  
5 700 school health visitors (part-time MOH nursing  
aides)

Other providers

Pharmacists: 16 000 (1983)

Pharmacies: 5 to 6 000 (1984) 36 per cent in Cairo  
13 per cent in Alexandria  
31 per cent rest of lower Egypt  
20 per cent upper Egypt

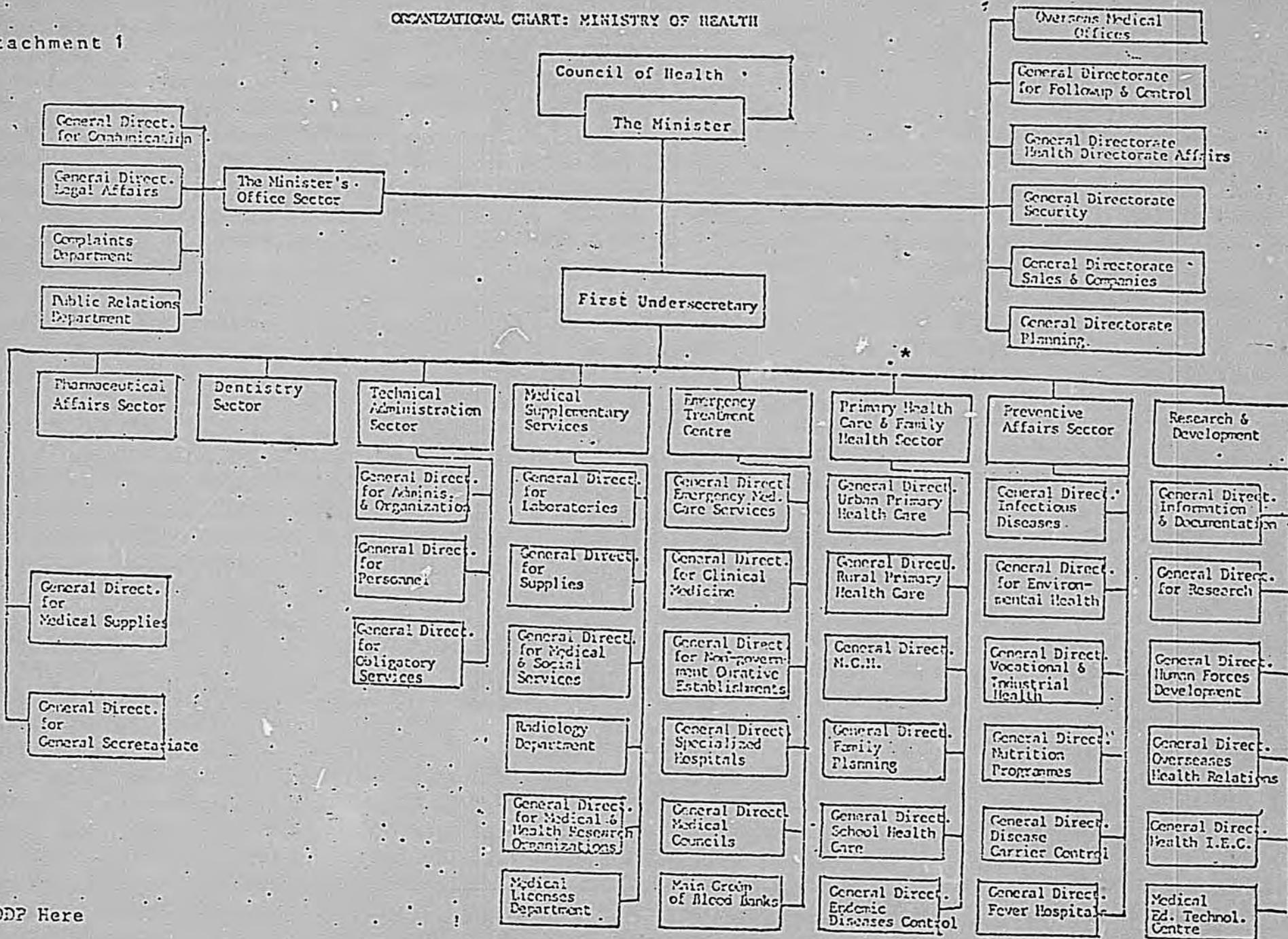
Sanitation technicians: 2 800

Laboratory technicians: 1 500

Dayas (traditional birth attendants) attend 50 to 80 per cent of all  
home deliveries depending on the area.

ORGANIZATIONAL CHART: MINISTRY OF HEALTH

Attachment 1



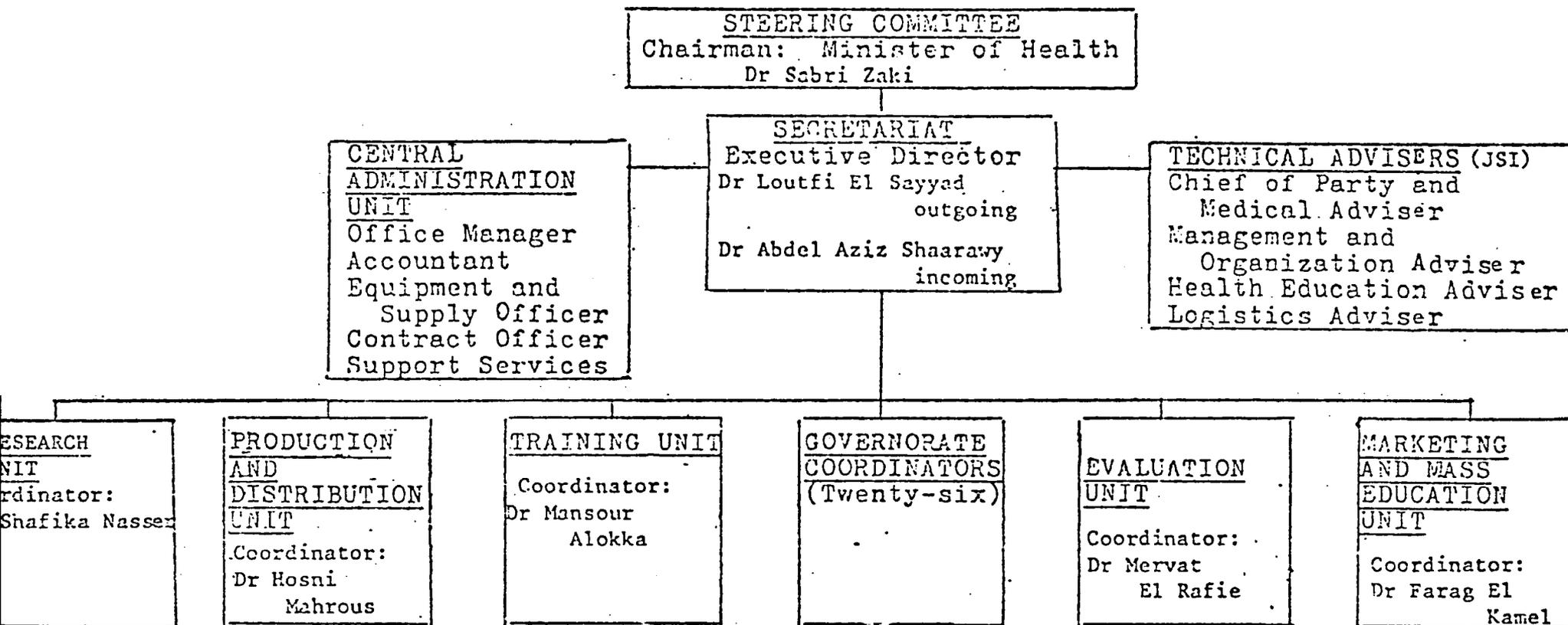
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ATTACHMENT 2

ESTIMATED POPULATION OF EGYPT BY GOVERNORATE (1983)

Governorate	Population (1000s)	
	Under 5 years old	Total population
Cairo	1046	6152
Alexandria	477	2805
Port Said	54	317
Suez	41	244
Ismailia	76	449
Dumyat	121	711
Dakahlia	575	3385
Sharkia	550	3238
Kalyubia	188	1108
Kafr El Sheikh	297	1749
Garbia	477	2205
Menoufia	359	2109
Beheira	525	3087
Giza	517	3039
Beni Suef	235	1380
Fayoum	245	1439
Minia	440	2588
Assiut	360	2116
Sohag	406	2339
Qena	359	2110
Aswan	130	762
Mersa Matrouh	26	194
Wadi Gedid	18	107
Red Sea	12	68
North Sinai	26	153
South Sinai	4	24
Totals (1000s)	7733 =====	45488 =====

NATIONAL CONTROL OF DIARRHOEAL DISEASES PROJECT  
 ORGANIZATIONAL STRUCTURE



ATTACHMENT 4

NATIONAL CONTROL OF DIARRHOEAL DISEASE CAMPAIGN

BUDGET

(August 1, 1983 through June 30, 1984)

WHO-EM/DIAR.DIS./34  
EM/EGY/CBD/001

56

Budget Category	Central Administration		Governorates Local Services		Production and Distribution		Mass Media and Public Education		Training		Research and Evaluation		Totals		Total in Dollars
	LE	\$	LE	\$	LE	\$	LE	\$	LE	\$	LE	\$	LE	\$	
<b>Personnel</b>															
Incentives	40,000		280,800						50,000				370,800		446,072
Honoraria	10,000								5,000				15,000		18,045
Salaries	20,000		7,200		13,200		11,800		13,200		14,000		79,400		95,518
Consultants	10,000				3,000						10,000		23,000		27,669
Per Diem	2,000		60,000				1,500		50,000		2,000		115,500		132,947
Sub-Total	82,000		348,000		16,200		13,300		118,200		26,000		603,700		726,251
<b>Equipment and Supplies</b>															
Vehicles and Parts		95,000		624,000										720,000	720,000
Other Equipment/Supplies	18,000	50,000	407,500	260,000	15,000	400,000	5,000		75,000	35,000			520,500	745,000	1,371,162
Sub-Total	18,000	145,000	407,500	884,000	15,000	400,000	5,000		75,000	35,000			520,500	1,465,000	2,091,162
<b>Transportation</b>															
Local Travel	10,000		31,200		12,000		2,000		55,000		5,000		119,200		130,585
International Travel	25,000												25,000		30,075
Vehicle Maintenance	10,000		31,200										41,200		49,554
Sub-Total	45,000		62,400		12,000		2,000		55,000		5,000		181,400		218,224
<b>Contract &amp; Grant Services</b>															
Technical Assistance (JSI)		783,276												783,276	783,276
Other Contracts & Grants			50,000		212,500		1,025,000		110,000		575,000		2,022,500		2,433,068
Sub-Total		783,276	100,000		212,500		1,025,000		110,000		575,000		2,022,500	783,276	3,216,344
<b>Other Costs</b>															
Sub-Total	165,000		52,000				20,000			520,000	50,000		287,000	520,000	855,261
<b>Contingency (10%)</b>															
Sub-Total	31,000	92,928	96,990	88,400	25,570	40,000	106,530		35,820	55,500	65,600		362,510	276,828	711,724
Grand Total	LE 341,000	\$ 1,022,204	LE 1,055,850	\$ 972,400	LE 231,270	\$ 440,000	LE 1,171,830		LE 397,020	\$ 610,500	LE 721,600		LE 3,975,610	\$ 3,045,104	LE 7,028,656

## Project Budget for Fiscal Year 1984

Budget line item:	Expenditure: in L.E. (planned for 1984)
1. Operational Costs	
<u>Personnel</u>	
professional -----	74 000
support staff-----	14 300
consultants -----	16744
steering committee -----	12 516
per diem -----	2 800
local travel -----	540
incentives -----	101 760
others: equipment, supplies, -----	23 000
2. Programme Costs      communication,	
governorates and local services -----	666 500
research and evaluation -----	418 000
ORS production and distribution -----	649 000
mass media and public education -----	1 361 250
training -----	157 800
national conference -----	60 000
audit -----	5 000
3. Contingency 10 per cent. -----	310 571
<b>TOTAL</b>	<b>3 873 781</b>

Without the contingency costs this                      an allocation by  
component of the project as follows:

Component	planned for 1984
Personnel and others -----	7 per cent
Governorates and local services -----	19 "
Research and evaluation -----	12 "
ORS production and distribution -----	18 "
Mass media and public education -----	38 "
Training -----	4 "
Others -----	2 "

National Control of Diarrheal  
Disease Program  
Cairo - Egypt  
1053 Corniche El-Nil St.  
Tel: 988806 / 848140

SCHEDULE FOR THE TREATMENT OF DIARRHEA IN CHILDREN

Type of Dehydration	Signs	Place of Treatment	Treatment
There are no signs of dehydration	The diarrhea has just started, the stools are loose not watery.	At home by the mother	<ol style="list-style-type: none"> <li>1. Give the child breast milk, juices, soups, soft food.</li> <li>2. The mother should go to a health unit if the child develops vomiting or more than three watery stools, or fever, or if the child is less active or irritable.</li> </ol>
Mild dehydration	<ol style="list-style-type: none"> <li>1. Watery stools</li> <li>2. Thirst</li> <li>3. No other signs.</li> </ol>	Outpatient area of a health unit by a nurse or doctor	<ol style="list-style-type: none"> <li>1. Give the child oral rehydration solution, by cup and spoon, as much as the child will take within two hours.</li> <li>2. Teach the mother about signs of dehydration (vomiting, sunken eyes, decreased skin elasticity).</li> <li>3. Advise the mother to continue breast feeding, other fluids and soft foods to keep the child strong. Continue oral rehydration solution as long as the stool is watery.</li> <li>4. Instruct the mother how to prepare the solution and how to give it to the child.</li> </ol>
Moderate dehydration	<ol style="list-style-type: none"> <li>1. Conscious</li> <li>2. Watery Stools plus any one of the following: <ul style="list-style-type: none"> <li>- Vomiting</li> <li>- Sunken eyes</li> <li>- Decreased skin elasticity</li> <li>- High fever</li> <li>- Decreased activity or very irritable.</li> </ul> </li> </ol>	Outpatient area of a health unit by a doctor, or by a nurse under doctor's supervision.	<ol style="list-style-type: none"> <li>1. Give the child oral rehydration solution, by cup and spoon, as much as the child will take within four hours to restore child's strength.</li> <li>2. Reduce the child's fever.</li> <li>3. Send the child home only if signs of dehydration have disappeared.</li> <li>4. Teach the mother about signs of dehydration (vomiting, sunken eyes, decreased skin elasticity).</li> <li>5. Instruct the mother how to prepare the solution and how to administer it. Advise her to continue the oral rehydration solution as long as the stool is watery.</li> <li>6. Advise the mother to continue breast feeding, other fluids, and to give soft foods to keep the child strong and healthy.</li> </ol>

Severe dehydration

Presence of any sign of dehydration plus any one of the following:  
- Unconsciousness  
- Persistent vomiting  
- Shock.

- (A) Outpatient area of a health unit, if there are no intravenous fluids available and the hospital is over 30 minutes away, by a doctor.
- (B) Inpatient area of a hospital where intravenous fluids are available, by a well-trained doctor.

- (A)
1. Give oral rehydration solution by nasogastric tube: 500 ml to child 9-6 months old, over a period of 4-6 hours, 1,000 ml to child more than 6 months old, over a period of 4-6 hours.
  2. If there are no nasogastric tubes available, give oral rehydration solution by dropper, while trying to reach the hospital as quickly as possible.
  3. Reduce the child's fever.
  4. When the child is able to drink, continue the rehydration solution by mouth.
  5. Before the child leaves the unit, educate the mother as written under "moderate dehydration".
- (B)
1. Give intravenous solution to correct shock and deficit (Ringer's Lactate or Special Diarrhea Solution): 100 milliliters per kilogram, or approximately one bottle (500 ml) to child more than 6 months old, over a period of 4-6 hours.
  2. When the child is able to drink give oral rehydration solution, as much as the child will take.
  3. Reduce the child's fever.
  4. If coma continues, give intravenous solutions with glucose, saline and potassium and rule out other causes of coma, such as hypoglycemia or meningitis.
  5. Before the child leaves the hospital, educate the mother as written under "moderate dehydration".

#### Special Notes

Antiemetics, constipatives, anti-diarrheals not advised. Ampicillin or sulphamethoxazole-trimethoprim ("Septrin") recommended for shigella dysentery, metronidazole ("Flagyl") for amebiasis and giardiasis.

Give soft foods and other fluids during diarrhea; breast milk, mashed potato, mashed beans, cooked rice, mahalabya, yoghurt, juices, vegetable soup.

ATTACHMENT 7

Specimen forms of Project Register

RECORD KEEPING AND REPORTING

1. Patient Registration

The treatment register has been designed for two purposes:

- to provide a work sheet for diagnosis and treatment of a child with diarrhoea
  
- to provide a ready means of compiling statistics about patient and their treatment

Two sample pages of the treatment register are presented (Pages 63 & 64). The first, Sample A, is a blank form as seen in the register book; the second, Sample B, is a form filled in with data as may be commonly found in a rural health unit, MCH centre, or outpatient department of a hospital.

The following are the main highlights of the register and the items included in the forms:

1. The location of the health facility is filled in on each page.
  
2. Each page has space for 10 patients. Instructions are given that each page should be filled out with 10 patients even if they come on different dates. Using 1 page with 10 patients makes compiling statistics much easier.
  
3. The month, day and year is filled for each patient. Although not specifically called for, the time of arrival may be recorded in this column.
  
4. Patient's temperature on entry is recorded.
  
5. The age of the child is recorded in one of the five columns available by placing a check ( ) in the appropriate column.

Estimation of age may be necessary. If a child is more than five years old he is not entered in this register (NCDDP does not collect statistics on children five or older) but treated as usual.

6. The doctor or nurse ask about the various symptoms and their duration .  
However the only recorded data are about the number of watery stools, vomiting and on presence of stools with blood and Mucos.

Instructions given in this respect include:

- Watery stool would run to all sides of a container always means some dehydration is present.
- Vomiting is an indication of observe the child more closely.
- Dysentery (blood and mucus) may require treatment with antibiotics especially if there is fever.

7. Signs of dehydration. Four main signs are looked for:

- decreased skin elasticity
- sunken eyes
- Decreased urine output ? (This column may be filled in after one or two hours observation, or from the history. It is important to follow urine output as a sign of hydration).
- Shock (no pulse, stupor or coma)

Watery diarrhoea without a sign of dehydration should be taken to mean loss of weight (in fluid) of about 5% of body weight.

Watery diarrhoea with any sign of dehydration, but the child is not in shock, should be taken to mean loss of weight (in fluid) of about 10% of body weight.

If there is dehydration and shock, the child needs intravenous therapy for fluid loss of 10-15% of body weight.

8. The body weight in kilos and grams is recorded to the nearest 10 grams.  
Body weight is a useful measure but not critical to successful rehydration.
9. The number of 200cc cups of oral rehydration solution taken at the health unit is recorded . The child should be given as much fluid as he desires.
10. Weight after 4 hours of treatment is recorded.
11. The outcome is recorded as either the child is improved or the child is referred to the hospital.  
  
Improved means that if a child had signs of dehydration, these are gone, and that urine flow is established. Return of appetite and activity are also signs of improvement.
12. A column for comments not covered in prior items. This column should be used to enter the degree of dehydration and the type of therapy given.
13. The doctor or nurse in charge of the case signs.
14. Pages of the register are numbered. Page totals for each column are added. When each of these are divided by the total number of patients and the answer multiplied by 100, percentages of patients with each of the findings may be calculated.





ATTACHMENT 8

Tables on the Epidemiology of Diarrhoeal Diseases  
obtained from some of the studies carried out  
in Egypt by various authorities

Table 1

Age Distribution of the children with Acute diarrhoea  
Hospital, Clinic and Community Surveys  
(Department of Preventive Medicine, Cairo University)

Years	1983	2 Rehydration	Village	Village	Abou El Reesh	
		Centres in	Kafr Hakem	Clinic	Out	In
		hospital		El Monieb	Patient	Patient
		1983	1982			
<1		77	69	54	58	83
1m-		18	29	38	30	17
2m-		3	2	8	8	0
3+		<u>2</u>	<u>-</u>	<u>-</u>	<u>4</u>	<u>0</u>
		100	100	100	100	100

Table II  
Death rates due to Diarrhoeal Diseases and  
to all Causes combined by Sex, 12 Villages,  
Menoufia Governorate, 1979-1980

Age at death (years)	Popul- ation	Age Specific death rates per 1000.					
		All Causes			Diarrhoea		
		Male	Female	Total	Male	Female	Total
<1	1588	152.8	145.7	149.2	64.0	78.7	71.2
1m-	1154	53.4	81.0	66.7	36.7	50.4	43.3
2m-	1646	10.6	13.8	12.2	4.7	5.4	5.3
0-3							38.6

Note: The infant death rates rather than the age specific death rates are as follows: all causes, male = 119.6, female = 110.7, total = 115.2, diarrhoeal, male = 50.1, female = 59.7, total = 54.9 per thousand.  
Source= American University of Cairo, B. Tekce, 1984.

Table III

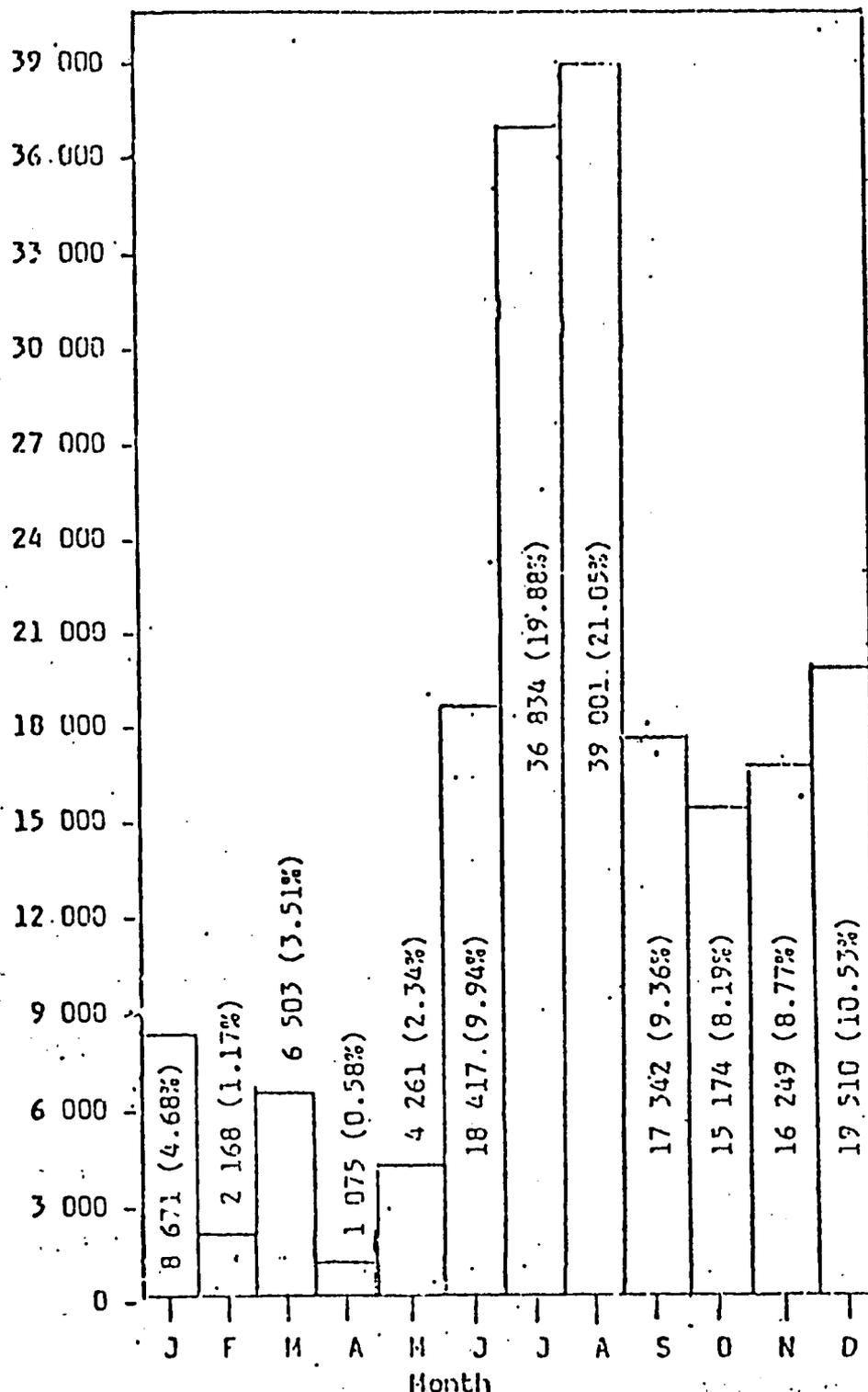
Distribution of Diarrhea Specific Deaths and  
Rate per 1,000 Children; By Age and Sex -  
in ORT Intervention versus Control Villages

	Study Villages						Total	
	ORT Intervention			Controls				
	Est. Child Pop.	Deaths £ Rate		Est. Child Pop.	Deaths £ Rate		Est. Child Pop.	Deaths £ Rate
0-11								
M	1 907	55 28.8		1 456	79 54.3		3 363	134 39.8
F	1 804	52 28.8		1 377	81 58.8		3 181	133 41.8
T	3 711	107 28.8		2 833	160 56.5		6 544	267 40.8
12-23								
M	1 711	24 14.0		1 306	17 13.0		3 017	41 13.6
F	1 618	17 10.5		1 236	23 18.6		2 854	40 14.0
T	3 329	41 12.3		2 542	40 15.7		5 871	81 13.8
24-59								
M	4 789	4 0.8		3 657	6 1.6		8 446	10 1.2
F	4 530	3 0.7		3 459	5 1.4		7 989	8 1.0
T	9 319	7 0.8		7 116	11 1.5		16 435	18 1.1
Totals								
M	8 407	83 9.9		6 419	102 15.9		14 826	185 12.5
F	7 952	72 9.1		6 072	109 18.0		14 024	181 12.9
T	16 359	155 9.5		12 491	211 16.9		28 850	366 12.7

N.B. Distribution of child pop. by age and sex is based on the proportional distributions as shown from SRHD project-wide household surveys.

Source: Dr. Ahmed Nagaty, Executive Director

ESTIMATED DIARRHOEAL RELATED DEATHS  
IN CHILDREN UNDER THREE YEARS OLD, BY MONTH



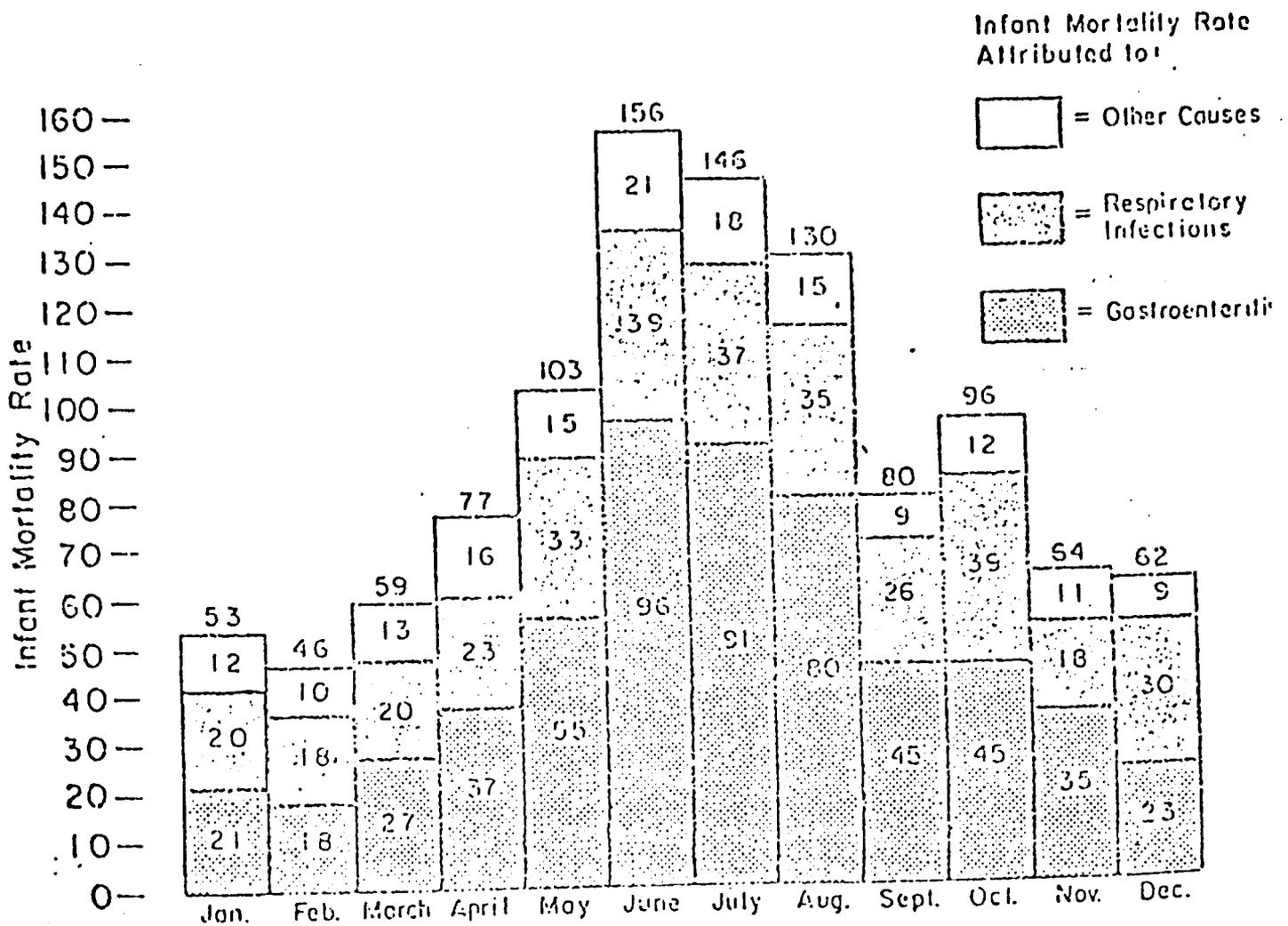
Dakahlia Data (%) 6 0 5.5 9.3 0.8 2.5 7.4 15 6 13.4 10.9 5 2 10 7 7 9

\* 1984 year-end population estimated to be 48 million. The under three year old population is estimated to be 10 percent of the total population, or 4.8 million. The American University in Cairo (AUC) found in its Menoufia Study, the diarrhoeal related deaths in under three year olds to be 38.6 per 1 000 children. If this rate applies nationally, there will be 185 280 such deaths in 1984.

TABLE V

MIT - Cairo University Health Care Delivery Systems Project  
Health System Questionnaire: Part II  
March 1978  
Questions #4 and #6

Histogram: The Infant Mortality Rate in Rural Egypt by Attributed Cause of Death, 1977



Note: The histogram is based on responses from 119 of 131 (90.8%) centers/units. Centers/units were excluded from the computations if they provided incomplete information or if the sum of deaths due to gastroenteritis and pneumonia is reported to be over 20% more than deaths due to all causes for 1977.

Table VI

National Knowledge of ORT\*

	Upper Egypt		Lower Egypt		Great Cairo
	Urban	Rural	Urban	Rural	
Oral Therapy					
Know it and used it	<u>82(40)</u> 207	<u>95(45)</u> 212	<u>90(43)</u> 209	<u>94(44)</u> 212	<u>99(47)</u> 209
Know it and did not use it	<u>62(3)</u> 207	<u>48(23)</u> 212	<u>66(32)</u> 209	<u>39(18)</u> 212	<u>68(32)</u> 209
Did not know it	<u>63(30)</u> 207	<u>69(32)</u> 212	<u>53(25)</u> 209	<u>79(37)</u> 212	<u>42(20)</u> 209

Source: EPI and PHC Review Ministry of Health, Egypt, 3 May 1984.

\* Response (percent)  
Cluster size

ATTACHMENT 9

RESEARCH PROJECTS SUPPORTED BY THE PROJECT

A. Epidemiological Research

1. Toxonomy study

This is a comprehensive study, covering children in seven governorates. The plan was to describe the actual clinical pattern of diarrhoea on a longitudinal basis, to correlate this with mothers perception and behaviour. The data are expected to help focus health education building on mothers attitude and investing in some of their positive behaviour. The data will also be useful to determine the actual number of ORS packages needed for the national campaign. Two censuses were carried out at the beginning and at the end. The study is a collaborative work between the NCDDP and five different institutes. The study was conducted between July and December 1983. Results are being processed for reporting.

2. Seasonal variation

Prevalence of diarrhoea carried out on the children mentioned in activity 1.1.

3. Etiological agent of infective diarrhoea

This is a study of microbiological agents isolated from stools of children suffering from diarrhoea. The study will cover 500 cases and 500 controls from rural, urban and hospital cases.

This will be conducted over 2 years. Pilot work has already started.

B. Applied Research

1. Chemical composition of traditional home prepared fluids. This is carried out in the Nutrition Institute.

2. Container study. This was a study of containers available at home. The aim of the research was to find out the most suitable size to dissolve the ORS and hence to direct production for the NDDCP to that size.

3. Polyvalent I.V. solution. A research conducted in several centres to

identify the most suitable solution for I.V. use in severely dehydrated children.

4. A study of the amount of ORS needed to rehydrate children in hospital rehydration units.
5. A study of the use of ORS in newly born premature children suffering from diarrhoea at Al Galaa hospital.
6. A programme of health education to school children, and its effects on their younger siblings, El Hussein Hospital - Dr A. Essa.
7. Role of antimetics when ORT is used .
8. Milk feeding after fast rehydration
9. Teaching mothers about mixing ORT using behavioural techniques, determining long-term retention and whether diffusion of knowledge occurs to neighbours.
10. Mixing studies - accuracy if a standard cup is used.

C) Socio-cultural research

1. Sohag study of depot holders. This study was meant to identify local people who would be trusted to deliver ORT on a domiciliary basis. The study also covers KAP of mothers, health professionals and local leaders and actual experience with diarrhoeal disease in the most traditional part of Egypt.
2. Media habits of Egyptians in Alexandria.
3. Message testing and evaluation of media campaign.
4. Focus group studies with mothers to identify the logo, the colour and shape of the ORS boxes, emotional attitudes and concepts with respect to diarrhoea.
5. Anthropologic studies on illness concepts and care.

ATTACHMENT 9(continued)

Research projects supported by WHO (EMRO)

1. Comparison of prepacked sucrose salt rehydration mixture with prepackaged oralyte. Completed in 1982.
2. The role of rota virus v. bacterial pathogens in the aetiology of infantile diarrhoea  
1980 - 83
3. The effect of antibiotics on the duration of diarrhoea and severity of rehydration  
1981 - 83
4. Assessment of the effect of feeding practices on diarrhoea in children  
1981 - 83
5. Follow up of children who participated in the controlled field trial of TY21a vaccine.  
1982 - 83
6. Study of the Egyptian Governorates: incidence and mortality rates of diarrhoea-associated illnesses.  
1982 - 83
7. A multi-centre study of an aetiology of diarrhoea in the first three years of life  
1982 not yet completed

ATTACHMENT 10

LIST OF PARTICIPANTS

AND PROGRAMME OF THE REVIEW

EGYPT

Dr Mamdouh Gabr  
Professor of Paediatrics  
Faculty of Medicine  
Cairo University  
Cairo

Dr Mustafa T. Hammamy .  
Under-Secretary of State for  
Basic Health Services and  
Family Health  
Ministry of Health  
Cairo

Dr L.M. El-Sayyad  
Under-Secretary of State  
Ministry of Health  
Mansoura  
and Executive-Director NCDDP  
(outgoing)  
Cairo

Dr Shafika Nasser  
Faculty of Medicine and  
Coordinator for Research  
Cairo University  
Cairo

Dr Mervat El Rafei  
Professor of Public Health .  
and Coordinator of the Evaluation  
Cairo University  
Cairo

Dr Abdel Aziz Shaarawy  
Executive Director (Designate)  
MCH Ministry of Health  
Cairo

Dr Hosni M. Mahrous  
Marketing Coordinator  
NCDDP  
Cairo

Dr Gamal Abd El-Aziz  
Coordination and Implementation  
Coordinator  
NCDDP  
Cairo

- 75 -

Dr Hassan Abdel Monim  
Assistant Coordinator for  
Evaluation  
NCDDP  
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Dr Farag El Kamel  
Mass Media Adviser  
NCDDP  
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Dr Mansour Al Okka  
Training Coordinator  
NCDDP  
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USAID

Dr William Oldham  
Office Director for Health  
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Ms Constance Collins  
Project Officer  
USAID Office of Health  
Cairo

UNICEF

Dr Ibrahim El Kerdani  
Programme Officer for Health  
and Nutrition  
Cairo

JOHN SNOW PUBLIC  
HEALTH GROUP INC. (JSI)

Dr Norbert Hirschhorn (JSI)  
Technical Adviser to the National  
Diarrhoeal Diseases Control  
Project  
Cairo

Mrs Susan Klein  
Training Adviser  
Cairo

Dr J. Russell  
Management Adviser to the  
National Diarrhoeal Diseases  
Control Project  
Cairo

WHO RESOURCE STAFF

Ms Enriqueta Sullesta  
Nursing Programme Supervisor  
Coordinator, National CDD Task Force  
Ministry of Health  
Manila

WHO SECRETARIAT

Dr M. Merson  
Director CDD Programme, WHO  
Geneva

Dr R. Herniman  
Medical Officer, and team leader  
CDD Programme, WHO  
Geneva

Dr Rifaat Mahmood  
Regional Adviser, CDD  
EMRO  
Alexandria

Mrs H. Ghoneim  
Secretary  
EMRO  
Alexandria

NCDDP/USAID/UNICEF/WHO JOINT PHASE ON REVIEW

19 - 31 MAY 1984

TURSDAY, 19 May

\*8:30 a.m.

Registration of participants

9:00 - 10:00

Opening Ceremony

- Dr Loutif M. Al Sayyad, Executive Director  
NCDDP Welcome
- Dr Mamdouh Gabr, Cairo University
- Dr Moustafa Hamnamy, Ministry of Health
- Dr William Oldham, USAID
- Dr Ibrahim El Kerdany, UNICEF
- Dr Richard Herniman, WHO
- Dr Abdel Aziz Sharawi, Executive Director/  
Designate, NCDDP

10:00 - 10:30

Break

SESSION ONE

10:30

Objectives of the review and adoption of the agenda,  
Dr Richard Herniman

10:45

Structure and Functions of the NCDDP, Dr Loutfi M. El Sayyad

11:00

Review of Epidemiology of Diarrhoea in Egypt, Dr M. El Refai

Noon

Phase One Workplan, Targets and Achievements,  
Dr Bert Hirschhorn

1:00 p.m.

1:00

Lunch

SESSION TWO

2:30 - 3:30

Production and Distribution of Rehydration Materials -  
Progress and Constraints, Dr Hosni Mahrous

3:30 - 5:00

Training:

1. Training of Health Manpower & Mothers, Dr M. Al Okka
2. Training Materials produced by NCDDP, Ms Susan Klein
3. Slide Presentation, Dr L. El Sayyad

SUNDAY, MAY 20

SESSION THREE

- 8:30-9:30 am Mass Media in Promotion of Oral Rehydration Therapy  
Dr. Farag Elkamel
- 9:30-10:30 am Practical Research in Support of the NCDDP  
Dr. Shafika Nasser
- 10:30-11:00 am Ethnographic Survey of KAP in Diarrheal Disease - Methods and Findings  
Dr. Bert Hirschhorn
- 11:00-11:30 am Tea break

SESSION FOUR

- 11:30-Noon Field Implementation: Rehydration Centers  
Dr. Gamal Abdel Aziz
- Noon-1:00pm Administration: Strengths & Constraints  
Dr. Jerry M. Russell
- 1:00-2:30 pm Lunch

SESSION FIVE

- 2:30-3:00 pm Special Studies  
Dr. Bert Hirschhorn
- 3:00-5:00 pm Evaluation Framework & Methodology  
Dr. Mervat El Rafei

MONDAY, MAY 21

SESSION SIX

- 8:30-9:30 am Video display of NCDDP advertising & training material.- Dr. Farag Elkamel
- 9:30-10:30 am Orientation to field visits  
Dr. Gamal Abdel Aziz  
Dr. Richard Herniman

Adjourn, Travel

Tuesday, 22 May - Thursday, 24 May

FIELD VISITS

Cairo

Dr Mamdouh Gabr  
Dr Moustafa Hamamy  
Dr M. El Refai  
Dr Ibrahim El Kerdany  
Dr Hosni Mahrous

Alexandria

Dr N. Hirschhorn  
Dr S. Nasser  
Ms E. Sullesta  
Dr A. Sharawi

Mansoura

Dr L. El Sayyad  
Dr R. Mahmoud  
Dr M. Al Okka  
Dr H.A. Moneim

Oena

Ms Connie Collins  
Dr G. Abdel Aziz  
Dr R.H. Hernimen

Friday, 25 May

Day Off

Saturday, 26 May

8:30 a.m. - 2:30 p.m.

Reports of field visits

Sunday, 27 May - Tuesday, 29 May

Analysis of Information, preparation of conclusions

Wednesday, 30 May

Presentation of reports and recommendations

Thursday, 31 May

Preparation of final report