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AN EVALUATION OF THE
ORAL REHYDRATION THERAPY PROGRAM
OF THE
MINISTRY OF HEALTH OF THE
GOVERNMENT OF JORDAN

A Report Prepared By:

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EXECUTIVE SUMMARY

The Al-Bashir Hospital Oral Rehydration Center has been functioning satisfactorily. It has trained doctors and nurses from both the Pediatric Department of Al-Bashir Hospital and other regional and peripheral hospitals. The training experience, however, has been limited because of a lack of diarrhea cases during the winter and spring.

The use of oral rehydration therapy (ORT) at other hospitals (five were visited) varies. In some institutions, it is underdeveloped, and in others, satisfactory, depending on the motivation and interest of the personnel who have been trained. The doctors who took part in the orientation at the Al-Bashir facility when there were few cases present were not ready to implement the program.

A trained team should be organized to assist in the establishment of ORT programs at other hospitals. A committee should be appointed to make site visits to the peripheral hospitals and centers to supervise and standardize operations in these facilities. This action will help to ensure the success of the program. Information on, for example, the procurement of oral rehydration salts and other supplies, instructional materials for mothers and health workers, and records and reporting forms will have to be disseminated widely throughout Jordan.

It would be helpful to prepare a training schedule for the health personnel at the various hospitals and health centers. The three regional hospitals could assist in training personnel from the smaller hospitals, the maternal and child health (MCH) centers, and the health centers after their own capabilities for training are established.

Dr. A. R. Jalal, who heads the Al-Bashir center, needs an assistant. With additional help, Dr. Jalal will be free to supervise the ORT program in other hospitals and health centers. A permanent staff nurse with teaching capabilities should be assigned to the center also. She is needed to help train other nurses and nursing-aides, as well as mothers.

An instructional manual on ORT has been developed by staff at Al-Bashir with the assistance of Ministry of Health (MOH) officials. This manual will be mass-produced and distributed to MOH health centers. The booklet is designed to guide mothers in the use of oral rehydration preparations.

A protocol has been prepared for the Nutrition Rehabilitation Unit, the establishment of which has been discussed with appropriate officials. Specific guidelines have been written on the location and staffing of the unit, and on equipment and supplies. A high-energy formula for use in the unit has been recommended.

ABBREVIATIONS

MCH	Maternal and Child Health
MOH	Ministry of Health
NIS	Nutritional Intervention Subunit
ORC	Oral Rehydration Center
ORT	Oral Rehydration Therapy
OPD	Outpatient Department
PAHO	Pan American Health Organization
USAID	United States Agency for International Development
WHO	World Health Organization

I. INTRODUCTION AND BACKGROUND

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In September 1980, the Oral Rehydration Center (hereafter referred to as the Center) was established in the Pediatric Department of Al-Bashir Hospital, in Amman, Jordan.

The Center demonstrates the use of oral rehydration therapy (ORT) to manage diarrhea. It also is a training ground for doctors and nurses from other hospitals and health centers who train there before ORT is introduced in their areas.

The Center has two units. The Inpatient Unit manages moderate to severe diarrhea and dehydration. The Outpatient Unit cares for milder cases.

A large number of malnourished babies is admitted to the Center. To provide proper treatment for these infants, a third unit, the Nutrition Rehabilitation Unit, has been proposed. This unit has yet to be established.

Purpose of the Assignment

The purpose of this assignment was to follow up the Oral Rehydration Project initiated during an earlier assignment (September 1980). The consultants were asked to:

- evaluate the performance of the Oral Rehydration Center at Al-Bashir Hospital;
- evaluate the performance of oral rehydration centers and units in regional and peripheral hospitals following orientation and training of staff at Al-Bashir; and
- prepare to extend the oral rehydration program to the maternal and child health (MCH) centers and other health centers in the coming season.

Schedule and Program of Activities

The following is a summary of the consultants' activities in Jordan.

- March 26: Arrival of Ms. Sullesta. Briefing at USAID/Amman.
- March 27-29: Meetings at Al-Bashir Hospital. Tabulation and preliminary analysis of data.
- March 29: Arrival of Dr. Nalin. Meetings with Dr. Abu Dahab, Dr. Jalal, Ms. Haddad, residents, and other staff.
- March 30-31: Review of training programs and patient records at Al-Bashir. Visits to Zerka Hospital and University Hospital. Meeting with AID officials.
- April 1: Visits to Irbid Hospital and Abu Obaidah Hospital.
- April 2: Meeting at the Ministry of Health (MOH). Visits to Salt Hospital and Madaba Hospital.
- April 3: Meetings with Dr. Jalal and AID officials. Preparation of nutrition protocol; drafting of preliminary report.
- April 4: Meeting with His Excellency, the Minister of Health. Meeting with staff of Al-Bashir Center to discuss report and plan further development. Review of nutrition protocol. Lecture at University Hospital. Meeting with Westinghouse staff to discuss ORT training and implementation of the program in the communities.
- April 5: Departure of Dr. Nalin. Continuation of data processing and tabulation (Ms. Sullesta and Al-Bashir staff).
- April 6: Data processing and tabulation.
- April 7: Departure of Ms. Sullesta.

II. OBSERVATIONS AND FINDINGS

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National Oral Rehydration Therapy Training Center, Al-Bashir Hospital

The general level of performance at Al-Bashir Center is satisfactory. Staff are keenly interested in the program, and they are highly enthusiastic about reviewing data and planning for the program in the coming season. The physical plant is intact and functioning. At this time, the caseload is light because of a seasonal diminution in the number of diarrheal admissions.

Records of 636 outpatients and 136 inpatients were made available for analysis. Additional records were requested on patients who had been admitted since September 1980 to the general pediatric ward but who had not been admitted to the oral therapy ward. These records, regrettably, could not be located by April 3. It is hoped, however, that they will be made available soon; they are essential to a proper analysis of overall performance and to the evaluation of available data.

Data are being processed with the assistance of residents and staff. Considerable progress already has been made. Only about half (300) of the records on outpatients contain all the necessary data, but most of the records on inpatients are complete. Staff have agreed to monitor the records closely to ensure that they are complete and to improve their value.

It was suggested that recording forms be modified slightly. After a review was made of Dr. Abu Dahab's plans, a decision was made to revise the forms slightly so that they could be used in the projected nationwide (hospital-based) diarrhea surveillance system designed by Dr. Dahab. (Samples of the revised forms are appended to this report.)

The consultants reviewed training activities. They found that, in addition to the personnel who were trained during the earlier visit (see AID-APHA report on the establishment of the Center), a significant number of physicians and nurses from other hospitals have been trained. Residents at Al-Bashir, including Dr. Bashir, Dr. Hamida, Dr. Said, Dr. Mustafa, Dr. Hajid, Dr. Ghassan, Dr. Munder, Dr. Md. Farouk, and Dr. Haya, have been systematically rotated through the Center. Others who have been trained are Dr. Abdul Majid, Dr. Abdul Mohsen, Dr. Ali Okasha, and Dr. Amad Shunnak (all two weeks). Twelve specialists have participated in one-week training sessions: Dr. Saleh Shejrawi, Dr. Abdel Hafiz Momani (Irbid), Dr. Salim Ghawi (trained in internal medicine), Dr. Md. Shaker (Jerash), Dr. Yasin Maani (Tafili), Dr. Md. Nail (Mafrak), Dr. Munawar Haftab (Salt), Dr. Nasser Zama (Zwerka), Dr. Mahmud Abdullah (Ramtha), Dr. Yakub Ayid (Kerak), Dr. Mazin Stettiyyeh (Madaba), and Dr. Adman Kanaki. In addition, twenty-two visitors have inspected the Center since September 19.

Thus, although few cases of diarrhea have been presented, the initial plans for training have been carried out and the training goals have, more or less, been realized. Geographical coverage of regional and district hospitals has been good.

The experiment to reduce the training period from three weeks to two weeks (or less) was not successful for a variety of reasons. One, the center could not control the selection of trainees. Although most of the trainees were quite satisfactory--and three or four were superb--a few, it was reported, were not at all motivated or interested in the program, gave little attention to the sessions, or left prematurely. Two, changes in attitudes toward oral rehydration therapy cannot, it seems, be effected if staff do not spend at least three weeks in the ward.

During their earlier visit, the consultants noted the seriousness of the marasmus problem and recommended that malnourished patients be admitted to a separate room. This has proven to be impossible. Additional technical information on practical therapeutic nutritional regimens has been provided, however, and a decision has been made to hire one formula nurse with extra training to initiate the use of high-energy, supplemented formulas for post-diarrheal marasmic patients. A protocol for this purpose was prepared and discussed with Drs. Dahab and Jalal, Ms. Hadda, and others (see Appendix B). The recommended regimen is based on a highly successful protocol for the treatment of kwashiorkor.

The creation of the nutrition unit would result in more efficient use of the Center's staff, particularly during the post-diarrhea season, when marasmus persists. The correction of Gomez Grades II and III malnutrition would reduce the incidence of recurrent diarrhea in the malnourished infants who are seen at Al-Bashir, and it also would facilitate the creation of a data base for epidemiological analysis of malnutrition and appropriate strategies, including visits to homes and interventions.

Four priorities were established for the coming diarrhea season. Each of these is described below.

1. First Priority: Complete staff training in oral therapy by bringing in staff who either have not participated in the Center's course or who arrived after cases were no longer being admitted.
2. Second Priority: Appoint a two-person implementation team. The team should include one experienced Al-Bashir resident and one experienced nurse. The team would visit each peripheral hospital after that hospital's staff have completed the course at Al-Bashir. The team would assist the pediatricians at these hospitals in setting up their own inpatient and outpatient oral therapy systems. The team would

remain on site for seven to ten days, until the systems are functioning and problems have been solved.

3. Third Priority: Rotate doctors, nurses, and midwives from clinics, health centers, and MCH centers through the Al-Bashir course this summer.
4. Fourth Priority: Liaison with military hospitals and provide materials and abbreviated training sessions for private sector practitioners. Also introduce approaches using television and other media to increase awareness of oral therapy and to improve skills.

Copies of recent studies on oral therapy and the Compendium of Abstracts on Oral Therapy, published by the Pan American Health Organization (PAHO), were distributed. Articles also were distributed at the peripheral centers.

Dr. Jalal is a strong advocate of oral therapy, and he is actively disseminating information on the subject. He is keenly interested in extending the program throughout the country. He should continue to serve as National Oral Therapy Coordinator during the coming year, when the program enters an important phase.

Dr. Abu Dahab is lending essential support to the program in his department and is analyzing data to guide future development. He, too, is interested in the application of the program nationwide and is establishing the basis for diarrheal disease-surveillance by the Government Health System.

Ms. Haddad is providing valuable supervision and support. Her nursing staff are to be commended for their keen interest in and invaluable support to the program. (For additional information on staffing, see Chapter III.)

Following discussions between Center staff and the consultants, it was agreed that within one or two months of the visits of the implementation team, an ad hoc committee consisting of Dr. Dahab, Dr. Jalal, Dr. Momani, and a ministry representative should visit the peripheral hospitals to inspect and evaluate the results. A sample of a form for standardizing the committee's evaluations is provided in Appendix D.

Zerka Hospital

No oral therapy activities were observed at Zerka Hospital. There is no evidence that there has been any attempt to implement the ORT

program there. There were no cases on the ward at the time of the consultants' visit, but oral therapy packets were available.

There is a surprising lack of interest in ORT, and some staff are adamantly opposed to initiating such a program. One specialist would not remain for discussions with the consultants; two others repeatedly stated that there was not enough space, there were not enough nurses, that mothers could not be allowed on the wards to help. Their reasons contradict fact. For example, although space is divided, somewhat awkwardly, into small, separate units, there is a room that is well equipped with cribs and equal in size to the Al-Bashir unit; it easily could accommodate mothers on chairs. The specialists admitted that 60 percent or more of the cases they see suffer from gastroenteritis in the summer, and 30 percent suffer from this disease year round. It is feasible, therefore, to admit mothers and to teach the two nurses on staff how to supervise mothers efficiently. The nurses must be overworked; they have to maintain many IVs, the exclusive reliance on which must result in increased (and inordinate) numbers of admissions. Use of oral therapy would reduce admissions, reduce the length of a patient's hospital stay, and free nurses and other staff for other work.

The hospital seems to be overstaffed with physicians, despite the large number of outpatients. There was little observable activity when the consultants arrived (11:00 a.m.). Apparently, most activity is in the early morning, after which time staff are underutilized, at least at this time of year. It was suggested that perhaps some staff could conduct afternoon classes for mothers in oral therapy or preventive nutrition. The consultants suggested also that the residents be rotated to Al-Bashir for training when cases reappear and that the specialists be re-rotated to Al-Bashir so that they can become more familiar with the procedures for establishing their own units. If these recommendations are implemented, the capacity of the existing twenty-two bed unit will be increased.

Some misconceptions about ORT were expressed by the physicians. Some of the physicians, for example, thought that they could not use the packets because they did not have a bottle warmer; they preferred using the Najjar packets because they thought they would not have to warm the resulting solution. Others said that the children in Zerka do not drink the solution, but that those in Maan do. These and other speculations seem to reflect a poor level of motivation. Such misunderstandings can be corrected by retraining the physicians at Al-Bashir.

Irbid Hospital

The staff of the Pediatrics Department at Irbid Hospital set up their own oral therapy program with the help of Dr. Momani. They keep

a separate register of cases and results. They say that their experience has been highly satisfactory. The unit began using oral therapy on October 27, 1980; since then, it has treated 170 outpatients. This year, 53 cases have been treated. All the patients improved, but an undocumented number (specific records were not available) had to return to the hospital for an IV because of vomiting and other indications.

Persons who were severely dehydrated and in shock were admitted to Irbid as inpatients and received initial intravenous rehydration, which was followed by routing oral maintenance therapy. (Apparently, however, some who were not in shock were admitted for moderate dehydration.) Complicated cases were treated in the same way as at Al-Bashir. Mothers are allowed in the hospital to assist in the management of therapy.

The consultants were able to review past records. Staff told them that they would like to upgrade the records on their patients to appraise the results.

The consultants noticed that some staff who have not taken the Al-Bashir course continue to be skeptical of the results and efficacy of oral therapy.

Staff noted that the lack of equipment (e.g., refractometer, micro-hematocrit centrifuge, flame photometer, etc.) and the lack of facilities for analyzing stool cultures limit their ability to conduct detailed evaluations, demonstrations, and research.

Oral therapy is used to treat milder cases in the polyclinic. Since November 1980 (four months), twenty-seven inpatients have been treated with oral preparations, some with oral maintenance following IV rehydration. Several complicated cases resulted in deaths during this period. A high prevalence of marasmus and a case of kwashiorkor have been reported.

Approximately 160 short-term patients have been treated with oral therapy alone. It is reported that many more have received oral therapy as outpatients of the polyclinic. (Records were not made available; thus, figures cannot be cited.)

The staff are interested in obtaining forms, which they can adapt to their own needs, to keep more detailed records for evaluations. They also would like to be involved in peripheral outreach to surrounding clinics. They agree that one person on the staff should be held responsible for developing oral therapy programs.

The consultants examined general admission records. There have been 4,670 male and 6,764 female admissions. Reportedly, 60,000 male and 63,000 female patients have been seen at the polyclinic. Separate oral therapy registries should be kept in the polyclinic to determine the use rate for oral therapy.

Abu Obaideh Hospital

The staff at Abu Obaideh Hospital seem to be only slightly interested in oral therapy. Many have not received packets, and thus have not initiated an ORT program. (It is not clear that the staff asked the pharmacist to order the packets. The consultants advised them to do so.) Records in the Outpatient Department (OPD) indicate that 2,000 patients are seen each month. The data are for all diagnoses. Separate registers for diarrhea, death, and malnutrition are not kept. Staff strongly discourage the admission of inpatients because there is, reportedly, a shortage of nurses.

Abu Obaideh is a large, beautifully built, but empty hospital. Here also, there appears to be an early morning and evening rush, the rest of the day devoted to no significant activity. Three practical nurses and one registered nurse are stationed at the hospital, which opened in August 1980.

The staff are interested in learning more about oral therapy. Dr. Selaj, who took the Al-Bashir course, had been posted at Abu Obaideh but was transferred to Madaba. The new doctors have not been trained at Al-Bashir. Instruction sheets for the mothers would be particularly useful at Abu Obaideh.

Madaba Hospital

Despite a seasonally low caseload, the Madaba staff are using oral therapy and have set up a unit in two small, adjacent rooms. The rooms contain cribettes for oral therapy and other diarrheal inpatients, plastic spout-jugs for oral solution and plain water, a bottle warmer, a graduated cylinder, and other necessary equipment. Packets are available. The physicians and nurses are enthusiastic. A separate registry of cases is being maintained.

Salt Hospital

Salt Hospital needs more packets. Mothers are allowed on the wards, but proper forms, a registry, brochures, literature, and instruction sheets are not available. Staff seem to be interested in ORT but they need to be re-rotated through Al-Bashir. Those who have taken the course at Al-Bashir arrived when there were few cases. Only a few inpatients were treated with oral therapy before the last season ended. At the time of the consultants' visit, oral therapy was not being used in the Outpatient Department, which is located in an area downtown, separate from the hospital.

Meeting with USAID Personnel*

At a meeting with mission staff, progress in developing the national program was reviewed, and preliminary impressions were discussed. The consultants suggested that a subsequent visit would be useful if it were planned for the latter part of the coming diarrhea season (i.e., in late August or early September), unless cases peaked early, in which case it would be preferable to visit the hospitals in late June or early July. During this visit, the consultants could make a comprehensive review of progress and examine the program during a highly functional phase.

Meeting with Dr. Subehi

At a meeting with Dr. Subehi, chief of preventive medicine, MOH, the consultants distributed and reviewed copies of the draft instructions for mothers. Suggested revisions were added. The group discussed the need to distribute the revised, printed version within one month.

It was agreed that an implementation team and an ad hoc, on-site follow-up committee would be valuable adjuncts to the program.

The need to establish the nutritional unit was discussed also. It was agreed that the unit is needed and that action on this matter should proceed.

* Dr. Harrell, Ms. Richards, Dr. Turman, and Mr. Thomas.

III. CONCLUSIONS AND RECOMMENDATIONS

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The authors have examined the numerous aspects of planning, managing, and operating an oral rehydration therapy program. They have concentrated on, and developed recommendations for, the following components of the program:

- administration;
- training and outreach;
- supply and logistics;
- records and forms;
- instructional materials;
- media and publicity;
- strategies for program development; and
- development of nutrition programs.

Administration

A. Personnel

It is recommended that an assistant project officer be assigned to work under Dr. Jalal. This person should be a pediatrician or a senior pediatrics resident who is interested in a career in infectious diseases or gastroenterology. The recruitment and employment of this person should be a priority. With additional help, Dr. Jalal will be free to devote his time and energy during the coming, critical, months to program development and teaching.

At the discretion of Ms. Haddad and Dr. Dahab, one of the nurses at Al-Bashir who is expert in oral therapy should be upgraded to nurse-in-charge of the oral therapy ward; she should be assigned the specific tasks of supervising staff and coordinating the training sessions for nurses and students. The nurse who agrees to assume this additional responsibility should be rewarded with a promotion.

B. Trainees

The selection for candidates for training should be more critically appraised, and acceptance should be based on the recommendations of a respected senior colleague who knows the candidates.

All "short-stay" patients should be treated in a small, specially designated section of the emergency room by a nurse experienced in oral therapy and supervised by a resident.

The oral therapy ward probably should be moved to the larger ward adjacent to the space now used for isolation. The nutrition unit could be located in the isolation room.

C. Hospital Practice

It is encouraging to see the shift in Al-Bashir's policy on the presence of mothers in wards. Pediatric wards, other than the oral therapy ward, are now allowing mothers to help. This should be the practice at all oral therapy units in other hospitals as well. The practice of excluding mothers from the ward in Zerka Hospital should be stopped.

The Al-Bashir Center should take complete control of therapy of all diarrhea cases, including those with significant complicating diseases or malnutrition who require, for example, intravenous therapy or antibiotics for specific indications. This action will enable the residents to become experienced in handling all kinds of cases and enable them to become expert in intravenous as well as oral therapy. Excellent care is provided on the oral therapy ward, and patients will benefit from being admitted to a ward where staff are well trained and capable. As the skills of the residents improve, so, too, will the evaluation of therapy and recordkeeping.

Training and Outreach

The priorities for training and retraining have been listed. The three-week period of training should be preserved for all teacher-trainees at the resident level or above. A pretest and a posttest consisting of twenty short-answer questions on, for example, oral therapy and diarrheal disease and malnutrition should be administered to all trainees before and at the end of their training at Al-Bashir. Trainees also should be asked to complete an evaluation of the course before they leave Al-Bashir.

It might be valuable to give lectures or conduct demonstration sessions that would complement practical training in the ward. During training, dependence on laboratory procedures, cultures, and research equipment for routine therapy needs to be emphasized.

A top priority should be the designation of implementation teams consisting of a highly trained and effective resident and a nurse who would assist their counterparts in the major peripheral hospitals in setting up peripheral oral therapy units.

It is also important that an ad hoc, on-site committee be appointed to inspect the peripheral units in June and July.

Oral therapy should be at all levels and included in the curriculum of the medical college.

Supply and Logistics

A bulletin should be sent to every pediatrician, chief nurse, and pharmacist in every hospital and clinic to remind them of the correct procedure for ordering oral therapy packets and to advise them to stock packets and equipment now for the coming season. In addition, cheap, one-liter plastic bags should be provided and given to mothers. They should be used to accurately dilute the packets.

All useless and dangerous antidiarrheals supplied by the Ministry should be recalled and not recorded. Streptomagma and Neodiarrhein are on the list of such items.

The Ministry should make an exception and help the university obtain packets so that it can promote training in oral therapy.

Records and Forms

A packet of sample history and physical forms, OPD forms, clinic follow-up forms, intake and output forms, etc., that are suitable for an oral therapy unit should be sent by the Al-Bashir unit to all peripheral units. Instructions on how to obtain additional forms should be provided.

The forms for the proposed national survey, which will be supervised by Dr. Dahab, should be standardized for computerization. Access to computers and recruitment of a programmer should be arranged before forms are printed.

All oral therapy units should be instructed to keep separate registers of cases (inpatient and outpatient); staff should continue to collect

certain basic data and the vital statistics recorded on existing forms. Separate registers should be kept for diarrhea inpatients, diarrhea outpatients, malnourished cases, and fatal cases. Records should include information on the amount of oral or intravenous therapy that is given, complications, weight, height, etc.

Instructional Materials

The brochure on instructions to mothers is overdue. It is hoped that the corrected and revised version will be printed and distributed to all units, pediatrics wards in peripheral hospitals, outpatient departments, MCH units, and other health facilities within six weeks (before the end of May). This matter should receive top priority.

In addition, it is recommended that Dr. Jalal and Dr. Dahab select certain forms, references, and other instructional materials and guidelines and have them reproduced as an information packet that can be sent to each major peripheral unit. The packet could include "Guidelines for Setting Up an Oral Therapy Unit in Hospitals or Outpatient Clinics." A checklist of guidelines for screening cases for oral, as opposed to intravenous, therapy and guidelines for triage of cases (i.e., indications for admission, as opposed to discharge, of oral therapy patients) would also be useful. Perhaps it would be useful also to redesign the discharge forms or the admission forms so that information on the child's classification and the admitting resident's reasons for recommending an IV or treatment as an inpatient or outpatient can be recorded.

These materials should be made available to the university to facilitate the training of new physicians in oral therapy. This is in the best interests of the government.

The Media and Publicity

Television coverage of oral therapy activities is a most welcome approach to bringing the program to the attention of the public and private practitioners. In the immediate, pre-diarrhea season, it would be helpful to publicize oral therapy on television, in the press, and on the radio. The spots, which would help to promote the program, should describe oral therapy.

Strategies for Program Development

A regional development strategy should be followed that is based on a policy of regional division of responsibility for program development.

Training "graduates" of the Al-Bashir program, including specialists in pediatrics at regional hospitals, who have already established oral therapy units should be assigned the responsibility for training more peripheral units and for supervising and reporting on the implementation of the ORT program facilities. It is suggested that the following regions be developed:

- Irbid Hospital (Dr. Momani) can be assigned to supervise development in Ramtha and Mafraq, and in local health centers, particularly during implementation, after adequate numbers of trainees have completed the course at Al-Bashir.
- Al-Bashir Hospital (Dr. Abu Dahab, Dr. Jalal) should concentrate on the implementation of an ORT program in Zerka, Abu Obaideh, and all government units.
- Ma-an Hospital (Dr. Abdelillah) should be given the responsibility for Kerak, Tafileh, Madi Musa, Aqaba, and Shobak Health Point.

Development of Nutrition Programs

A nurse and a resident physician should be appointed to take charge of the nutrition subunit within two weeks. A special refrigerator in which stocks of solutions could be stored should be provided solely for use by the unit. The solutions should be marked clearly and with the name of the contents and concentrations. All instructions on the preparation of the high-energy formula should be written out in a special manual in the care of the unit nurse. An adequate and hygienic storage space for feeding bottles and an adequate supply of the four- and eight-ounce bottles should be provided. The procedures for recleaning and sterilizing bottles and feeds, and for storing stock solutions and other feeds, should be approved by Ms. Haddad and specified in the manual.

A description of the therapeutic regimen for malnutrition should be made available to the nutrition ward, and copies of the description should be given to all residents and trainees. The form for recording fluid intake should be used to record all feeds; it should contain a description, note the volume, time started and ended, etc. In addition, an accurate Detecto Beam Balance (not the platform variety) scale should be obtained and be available at all times. The proper procedures for weighing should be reviewed frequently according to the protocol.

Coordination

Certain aspects of coordination with regional centers have been discussed elsewhere in this report. Close coordination with central planning groups and with Westinghouse staff is essential.

Specifically, it is recommended that the Al-Bashir unit remain the sole training unit for teacher-trainees. No alternate set of training regulations, methods, and procedures should be introduced at this time. The program for trainer-candidates should not be reduced to less than three weeks to ensure that adequate training is provided. (Midwives and other medical personnel can receive training two days each week over several weeks.) Training at the periphery should follow the guidelines outlined above; training of trainers or senior personnel should not be carried out at the periphery, because caseloads are inadequate there and sufficient exposure to the proper number and variety of cases cannot be guaranteed. The Westinghouse training program for doctors should last three weeks and be conducted at Al-Bashir. The confusion that would otherwise arise from conflicting recommendations can be avoided by standardizing training and providing it at a central location. Centralized training is also recommended to reinforce the referral system. With centralized training, severe and complicated cases can be referred properly and managed as inpatients. Training at a central facility also will be useful for later planned nutritional outreach programs.

The use of salt-sugar ("incomplete") formulas should be discontinued. Recent data show that these formulas are very harmful; they induce rapid potassium depletion that reaches hazardous serum K⁺ levels within hours. At a recent meeting in Stockholm sponsored by the World Health Organization (WHO), the consensus was that further use of the sugar-salt mixes would be unethical because the formulas are harmful.

APPENDICES

Appendix A
LIST OF CONTACTS

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Ministry of Health

His Excellency, Dr. Zuheir Malhas, Minister of Health

Dr. Suleiman Subehi, Chief, Preventive Medicine

Dr. Shreem, Chief, Health Education

USAID Mission

Dr. Edgar Harrell, Chief of Mission

Ms. Lois Richards, Deputy Chief of Mission

Dr. James Turman, Chief, Technical Projects

Mr. Jack Thomas, Health and Population Officer

Dr. Sami Khoury, Health Officer, Mission; Chairman, Department of Preventive Medicine, University of Jordan

Al-Bashir Hospital

Dr. Mahdi Abu Dahab, Chief, Pediatric Department

Dr. Abdul Rahim Jalal, Specialist, Pediatric Department

Ms. Fadwa Haddad, Chief, Pediatric Department

Dr. Awni Hamdan, Resident in Pediatrics

Dr. Kamal Gharaibeh, Resident in Pediatrics

Dra. Hamida, Resident in Pediatrics

Dr. Ghassan, Resident in Pediatrics

Mrs. Afaf Salayth, Staff Nurse

Ms. Frocina Haddaden, Staff Nurse

Medical, Nursing, and Administrative Personnel

Zerka Hospital

Dr. Nasser Zamel

Dr. Zain Zaatari

Dr. Saleh Shajrawi

Residents and Nurses

Irbid Hospital

Dr. Abdul Hafeez Momani, Chief of Pediatrics

Dr. Ahmed Shonnak

Mrs. Shannok, Staff Nurse

Residents and Nurses

Abu Obaideh Hospital

Dr. Shahadeh Nasirudden

Dr. Ali Okasheh

Residents and Nurses

Madaba Hospital

Dr. Munawar Haftabbi

Dra. Said

Dr. Yousef

Residents and Nurses

Appendix B

CHECKLISTS FOR ESTABLISHMENT OF ORT
AT OTHER HOSPITALS AND CENTERS

Basic Items for ORT Unit for Emergency Rooms,
Outpatient Departments, and Polyclinics

Checklist for On-Site Visiting Committee

Appendix B

CHECKLIST FOR BASIC ITEMS FOR OPD ORAL THERAPY UNIT FOR EMERGENCY ROOMS, OUTPATIENT DEPARTMENTS, AND POLYCLINICS

Supervision: One nurse or nurse's aide; one resident to check cases on admission to OPD and before discharge.

1. Small table
2. Several benches for mothers to sit on
3. Two jugs, 10-liter capacity, with spouts; one for oral solution and one for plain water; different colors
4. Bottle warmer
5. Graduated cylinder, 2-liter capacity, with 100 cc graduations; unbreakable polyvinyl plastic desirable
6. Supply of ORALYTE packets
7. OPD diarrhea-case register
8. OPD diarrhea-case reporting forms
9. OPD discharge forms and forms for follow-up visit to clinic
10. Instruction brochure for mothers, in Arabic

CHECKLIST FOR ON-SITE VISITING COMMITTEE

Name of Site Visited: _____ Date: _____ Persons Contacted _____

1. Are oral therapy packets available at the site visited?
2. Is a separate oral therapy registry being kept?
3. Are all inpatient and outpatient diarrhea cases being recorded in the register?
4. Are malnourished or fatal cases separately noted?
5. What data are included in the register?
6. Name the forms in use for inpatients and outpatients.
7. Are instruction sheets for the mothers available and in use?
8. Are oral therapy and plain water jugs available at the unit?
9. Is a graduated cylinder present?
10. Is a bottle warmer present? Is it working?
11. Give the number of inpatients treated during the preceding 30 days with:
 - a. IV alone
 - b. IV plus oral maintenance
 - c. Oral rehydration and maintenance alone.
12. Give the total deaths during that interval (male and female separate).
13. Give the total number of marasmic infants treated during same interval.
14. Give a short appraisal of this unit's enthusiasm for, development and usage of, and training in oral therapy.

Signed _____

Appendix C

PROTOCOL: AL-BASHIR HOSPITAL MARASMUS CONTROL PROJECT
(Nutrition Rehabilitation Unit)

Appendix C

PROTOCOL: AL-BASHIR HOSPITAL MARASMUS CONTROL PROJECT (Nutrition Rehabilitation Unit)

Attn: Dr. Abu Dahab, Dr. Jalal, Miss Haddad, and Resident Staff of
Pediatric Department

Introduction and Background

The Al-Bashir Hospital Diarrheal Diseases Control Training Center has been functioning since September 9, 1980. Records of 616 outpatient cases and 136 inpatient cases, treated by the center's staff up to March 31, reveal a strikingly high prevalence of Gomez Grades II and III malnutrition among patients with diarrhea. Severe malnutrition has emerged as the chief clinical characteristic linked with almost all fatal diarrhea cases seen at the center, and with many non-fatal, severely-ill cases as well. It presents clinically as classical marasmus. Although these data are the subject of a separate report, now in preparation, the current protocol is being developed to initiate a specific effort to control the malnutrition associated with the diarrhea by therapeutic and prophylactic intervention. Recognizing that further reduction in case-fatality rates among infants at risk will depend heavily on corrective and prophylactic therapy of malnutrition, we intend to use recent concepts developed in research on kwashiorkor and to adapt them for therapy of marasmus, while at the same time attempting to better define the subpopulation at highest risk.

The roots of the problem of severe marasmus are complex, and the relative importance of various contributory causative factors remains to be clarified. It is clear, however, that the following are among the important factors:

1. REPEATED ATTACKS OF ACUTE DIARRHEA, with associated reduced caloric and vitamin and mineral intake (forced starvation, anorexia, nausea, vomiting).
2. Resulting malnutrition leading to:
 - a. reduced gastric acidity, with increased risk of repeated gut infection; and
 - b. risk of thymic atrophy (zinc deficiency).

3. Child abuse and neglect ("nutritionally battered baby" syndrome) due to social pathology, psychopathology in domestic environment, inadequate mother, etc.
4. Ignorance and poor mothercraft and improper choice of food.
5. Immunosuppression due to anomalies and infections.
6. Undiagnosed congenital, metabolic disorders and defects, and infection presenting as failure to thrive, etc.

The above analysis clearly indicates the need for a multi-pronged approach emphasizing public health education, alteration of certain cultural practices and beliefs relating to diarrhea, nutrition, and therapeutic and social-service intervention. In the current protocol, we propose to concentrate this effort on therapeutic intervention. We have the following specific goals in mind:

Specific Goals

Our specific goals are:

1. To develop a simple, practical nutritional treatment regimen for severely marasmic infants for use at the Al-Bashir DDC.
2. To maintain a register of affected families to provide the basis for epidemiologic analysis and to survey the environments and determine appropriate public health-preventive control measures for the home.
3. To use the nutrition program component for training in nutritional intervention, particularly during the diarrheal non-epidemic season.

Methods

Based on recent research on therapy of severe malnutrition, we intend to follow the procedures described below.

1. All dehydrated DDC ward admissions will receive rehydration therapy, according to existing guidelines.

2. After completion of rehydration, infants are usually started promptly on a half-strength milk formula and advanced as tolerated to full-strength formula (or, if not weaned, to breast milk). Recurrence of even mild dehydration, with continued water diarrhea while on milk, is treated with another "round" of oral therapy (ref. 2).

All inpatient infants are weighed. Heights or lengths (in centimeters) can be recorded.

In the current protocol, the above steps will be followed, but in addition, the following methods will be used:

1. Based on weights, heights, and age, clinical classification of nutritional status will be recorded.
2. All infants in Gomez Class II or III will qualify for the malnutrition unit and, after rehydration is complete and stools reach Grade III (semi-liquid), they will be transferred to the Nutritional Intervention Subunit (NIS).
3. All such infants will have weights measured on admission to the NIS and every 6 hours the first 2 days, and then every 12 hours thereafter. Finger (or heel stick) hematocrit and specific gravity will be measured on admission on the NIS and every 3 days thereafter. An admission NIS examination will be done to diagnose all occult infections, including routine chest X-ray blood culture, WBC, and differential urinalysis and stool culture.
4. On admission to the NIS, all such infants will receive the following sterile formula, prepared by specially assigned and trained formula nurses. Formulas can be stockpiled, frozen or refrigerated, depending on need, and warmed (37 degrees, Centigrade) before being offered to infants. A bottle warmer will be available in the ward. The composition of the formula is given in Table 1. The composition of the solution to make up the formula is given in Tables 2 and 3. Such solutions are to be stored in clearly labeled, sealed containers in separate refrigerators.
5. Infants 0-3 months old will be offered 4 ounces of high-energy formula every 3-4 hours. Infants 3-15 months old will be offered 8 ounces every 3-4 hours. These frequencies can be increased if appetite persists.
6. If NIS admission review of physical examination shows any infection, this will be treated vigorously with appropriate

Table 1
HIGH-ENERGY FORMULA COMPOSITION

<u>Choice of One Milk type</u>	<u>Milk Amount (g)</u>	<u>Sugar (g)</u>	<u>Oil (g)</u>	<u>Water</u>
Nespray (=Nido)	118	66	55	810
Pelargon*	190	None	55	810
Fresh Cow's Milk	885	66	55	42

* To be used routinely on nutrition ward.

Table 2
DAILY DIETARY INTAKE OF MINERALS AND VITAMINS

<u>Mineral or Vitamin</u>	<u>Daily Requirement During Therapy (Per Kg. Body Weight)</u>
KCl (Potassium Chloride)	4 Milliequivalents Per Kg.
MgCl ₂ (Magnesium Chloride)	2 Milliequivalents Per Kg.
Zn Acetate (Zinc Acetate)	1.8 Milligrams Per Kg.
CuCl ₂ (Copper Chloride)	0.2 Milligrams Per Kg.
Folic Acid	5 Milligrams (Powdered)
Multivitamins with Iron, Vitamins A, C, D, B Complex, B ₁₂ , and K	5-10 Drops Daily

Table 3-A
COMPOSITION OF STOCK SOLUTIONS TO BE ADDED
TO MILK FORMULA

<u>Ingredient of Stock Solution</u>	<u>Concentration Expressed in Milliequivalents Per Milliliter</u>
1. Potassium Chloride (KCl)	4 Milliequivalent/M
2. Magnesium Chloride (MgCl ₂)	2 Milliequivalent/M
3. Zinc Acetate (Zn Acetate)	1.8 Milligrams/Ml.
4. Copper Chloride (CuCl ₂)	0.2 Milligrams/Ml.

Table 3-B

AMOUNT OF STOCK SOLUTIONS TO BE ADDED TO EACH LITER OF MILK FEED
(Equals Child's Weight in Kilograms)

<u>Child's Weight (Kg.)</u>	<u>Milliliters of Stock Solution Per Liter of Milk Feed</u>			
	<u>KCl</u>	<u>MgCl₂</u>	<u>Zn Acetate</u>	<u>CuCl₂</u>
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8

antibiotics after necessary cultures of blood, urine, stool, etc., as indicated on clinical grounds, are obtained.

7. Infants whose clinical condition either shows no improvement or is worse after 48 hours (weight loss or recurrent dehydration) will be re-evaluated for possible new or occult infections or other complications. They will be given alternate nutrition formulas and other therapies, as needed, and based on clinical condition (e.g., Prosobee, lactose-free formulas).
8. Infants whose clinical condition improves and who demonstrate satisfactory weight gain will be discharged to clinic follow-up when they are stable. Mothers will receive specific instructions concerning feeding and hygiene and the schedule of weekly follow-up clinic visits for weights, plasma proteins, etc.

Dietary recommendations will be communicated to the mothers and a descriptive brochure will be developed. When advisable, nutritional and vitamin supplements may be provided for the home. Mothers will be requested to participate in the management of the infants in the ward, the rationale for which will be explained.

Evaluation

After completion of the first 20 cases, an evaluation will be made. The following information will be included in the report:

- clinical course and outcome of cases;
- rate of weight gain;
- rate of plasma protein rise; and
- status of intercurrent infections.

Based on this pilot series, any necessary modifications can be considered.

Expected Benefits

The expected benefits of the evaluation are described below.

1. Correction of malnutrition and prevention of recurrence via nutritional instructions to mothers should reduce infantile mortality; case-fatality rates should fall. The incidence of repeat diarrheal infections also should decrease.
2. The findings will provide the basis of an appropriate community outreach program for nutritional prophylaxis and therapy.

FLOW SHEET FOR PATIENT MANAGEMENT ON NUTRITION WARD

1. Admission Weight (Naked)
2. Admission Physical Exam Review and Infection Search
3. Admission Hematocrit and Plasma Protein Determination
4. Admission Progress Sheet Form
5. Weight Measurement (Naked) Every 6 Hours for 48 Hours, Then Every 12 Hours During Hospital Stay Recorded on Sheet
6. Hematocrit and Plasma Proteins on Admission and Every 3 Days
7. Begin High Energy Feeds (0-3-months old: 4 ounces every 3 hours; 3-15-months old: 8 ounces every 3 hours; give more feeds if appetite persists; offer feeds every hour if slow feeder)
8. Multivitamin Drops, 5 to 10 Drops Daily
9. Chest X-Ray on Admission
10. Cultures of Stool, Urine, Urinalysis, Culture of Blood, Sputum, CSF, if Clinically Indicated, Due to Fever, Hypothermia, Shock, Positive X-Ray, Neurologic Signs, Etc.
11. Appropriate Antibiotics and Antifungals Based on Above
12. Transfusion if Crit Below 24 (10 ml. per kg. body weight)

NUTRITION UNIT

(Record feed intake every six hours)

Patient's Name: _____

Age: _____

Sex: _____

Admission Date and Time: _____

Name of Accompanying Parent or Guardian: _____

Address: _____

<u>Date</u>	<u>Time</u>	<u>Weight</u>	<u>Crit</u>	<u>Plasma Proteins</u>	<u>Skin Elasticity</u>	<u>Stool Grade</u>	<u>Appetite and Oral Intake (cc of Milk)</u>	
							<u>Appetite</u>	<u>cc</u>
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

MOTHERS' CLINIC FOLLOW-UP EVALUATION FORM

Date of Visit: _____

Name of Mother: _____ Age: _____

Name of Patient: _____ Case Number: _____

Weight of Patient: _____ Plasma Protein: _____ Hematocrit: _____

General Condition: _____

Intercurrent Illnesses (Describe): _____

Drug Therapy This Week (Describe): _____

Formula Taken This Week (Describe): _____

Vitamins Taken This Week (Describe): _____

Impressions of Level of Understanding of Mother:

- Degree of Attention and Interest _____ High _____ Low
- Compliance of Mother _____ High _____ Low
- Interest of Mother in Child _____ High _____ Low

Error(s) of Mother in Care of Child (Describe): _____

Appearance of Child:

_____ Clean _____ Dirty
 _____ Well Dressed _____ Shabbily Dressed

Mother's Behavior Toward Child:

_____ Warm _____ Indifferent _____ Hostile _____ Other (Describe)

Marasmas Control Unit
MOTHER'S EVALUATION FORM

1. Date Child Admitted: _____

Child's Name: _____ Case Number: _____

2. Name of Mother: _____ Age of Mother: _____

3. Address of Mother: _____

4. Marital Status:

_____ Divorced

_____ Widowed

_____ Separated

_____ Married and Living with Husband

_____ Previous Marriages? ___ Yes ___ No

If Yes, how many (marriages)? _____

_____ Does husband have other wives? ___ Yes ___ No

5. Number of Children: _____

Ages and Sexes (Oldest to Youngest):

Age

Sex

(Oldest) 1st	_____	_____
2nd	_____	_____
3rd	_____	_____
4th	_____	_____
5th	_____	_____
6th	_____	_____
7th	_____	_____
8th	_____	_____
9th	_____	_____

15. Number of Rooms in House: _____

16. Occupation of Mother: _____ Father: _____

17. Top Educational Level of Mother and Father:

	<u>Mother</u>	<u>Father</u>
Literate	_____	_____
Illiterate	_____	_____
Secondary Education	_____	_____
University	_____	_____

18. Name and Relation of Persons Caring for Child When Mother Absent:

<u>Name</u>	<u>Relation</u>
_____	_____
_____	_____

19. Would you consider giving your child for adoption? _____ Yes _____ No

20. Interviewer's Impression of Mother's Comprehension of Nutrition Instructions:

- _____ Very Good
- _____ Fair
- _____ Poor

NUTRITIONAL INSTRUCTIONS FOR MOTHERS AT HOME

This form is to be devised, in Arabic, with illustrations, by Dr. Ja'ala, Dr. Abu Dahab, and Dr. Subehi. It is intended for mothers whose malnourished children have been rehabilitated and are improved and stable after having been treated on the Nutritional Intervention Subunit Ward. It will be used as a reference guide by the mother who has received instructions from the nurse as to proper choice and preparation of feeds for use at home, proper weaning, weaning foods, vitamin and mineral supplements, clinic follow-up visits, etc.

Criteria for Discharge

This memorandum will be devised by the Al-Bashir staff and posted and distributed as a checklist for when a child can be discharged to home from the Nutrition Ward.

Criteria for Discharge from Inpatient Oral Therapy Ward

1. Grade III stools or less.
2. No signs of dehydration.
3. Stable, as above, on milk for 6 hours or more.
4. Adequate understanding by mother of oral therapy instructions.

Criteria for Discharge from Nutrition Unit

1. Satisfactory weight gain over 7 days at least.
2. No evidence of coexisting infections.
3. Satisfactory rise in plasma proteins over at least 7 days.
4. Satisfactory rise in hematocrit over at least 7 days.
5. Adequate understanding by mother of nutritional instructions.

Appendix D

SAMPLES OF FORMS USED AT THE CENTER

Revised Outpatient Record

National Diarrhea Survey Form
(In Arabic)

BEST AVAILABLE DOCUMENT

Al-Bashir Hospital Oral Rehydration Center

OUTPATIENT RECORD

1. Case Number: _____ Date: _____ Time: _____ A.M.
P.M.
2. Name: _____
3. Address: _____
4. Diarrhea:
- Onset (Date) _____ Duration (Days) _____
- Frequency _____ Smell _____
- Appearance _____ Grade _____
5. Vomiting:
- Duration _____ Frequency _____
- Contents: Water _____ Blood _____
- Food _____ Bile _____
6. Urine Passed? _____ Yes _____ No
7. Physical Exam:
- Radial Pulse: Palpable _____ Not Palpable _____
- Rectal Temperature: _____ Weight: _____ Height: _____
- Nutritional Status: Normal _____ Poor _____ Marasmic _____
- Dehydration: Mild _____ Moderate _____ Severe _____
- System Review: _____
- Other Diseases (specify): _____
8. Treatment at ORC:
- Amount of ORS Given (in cc.) _____
- Date and Time of Discharge: _____
- Given Instructions: _____ Packets (no.) _____
- Other Treatments (specify): _____

By _____
(Name and Designation)

((١))

بسم الله الرحمن الرحيم

المملكة الاردنية الهاشمية
وزارة الصحة

استطارة دخول لمركز الامراض مستشفى

الاسم (من اربع مقاطع)

الحمر (بلا شهر)

رقم السجل

رقم الحالة في الامراض

تاريخ الدخول

تاريخ الخروج

العنوان

عمر الاب

عمر الام

مهنتها

مهنته

درجة القرابة الزوجية

ترتيب الدافل بالعائلة

عدد الاخوة

عدد الاخوات

حول الى المركز بواسطة: طبيب اسعاف

عيادة اختصاص

دايبب خاص

الاهل

غير ذلك

قام بتعبئة هذا النموذج : الطبيب

توقيعه

دقق النموذج : الطبيب

توقيعه

الاسهال :-

- ١- بدء الاسهال : حاد
- ٢- مدة الاسهال :
- ٣- عدد مرات الاسهال خلال ٢٤ ساعة
- ٤- رائحة البراز : كريه
- ٥- لون البراز : بني
- ٦- معتويات البراز : دم
- ٧- شكل البراز : درجة ١ متشكل وجامد
- درجة ٢ متشكل وطري
- درجة ٣ طئح لا شكل له
- درجة ٤ طئي عكروله لون
- درجة ٥ طئي صاف مثل ماء الرز
- ٨- الاصابة بالاسهال سابقا : نعم
- لا

- ١- متى اصيب (اذكر التاريخ)
 ١- اصابات اخرى بالعائلة : نعم لا عدد المصابين
 ٢- اصابات اخرى بالسرار : نعم لا عدد المصابين

الاقياء :-

- ١- بدء الاقياء : حاد مزمن متكرر
 ٢- توقيت الاقياء : قبل الاسهال بعد الاسهال مع الاسهال
 ٣- مدة الاقياء : ايام ساعات : صباح مساء
 ٤- عدد مرات الاقياء خلال ٢ ساعة
 ٥- محتويات القيء : ماء داءام غير مبرهوم دم
 مفرأ براز غير ذلك (حدد)
 ٦- طبيعة الاقياء : نافوزي تعشوي غيرها (حدد)
 ٧- هل للاقياء علاقة بالوجبات بالاسهال بانسعال

الاعراض الاخرى :-

- حرارة :
 انخفاض الوزن :
 ضعف الشهية :
 انتفاخ البطن :
 التجشؤ :
 التميع :
 الخفق العام :
 التشجنات :
 السعال :
 غيرها (اذكر) :

مصدر مياه الشرب :-

حنفية بئر نبع صباريح غيرها

تحفظ مياه الشرب في :-

خزان برميل زبر غيرها (حدد)

((٣))

مل خزانات المياه :-

مكشوفة دائمة أحيانا معدمة الشاطئ

يتم شرب المياه :-

من الحفنية مباشرة بواسطة كوب من الزير بواسطة اناء

غير ذلك (حدد)

لحالات المستحقة (قبل دخول المستشفى) :-

عزوب حقن سوائل ووريدية

سوائل بالفم امزجة تعاطيل

علاجات شعبية (اذكرها)

لطرق الشعبية التي استعملت لمعالجة الاسهال :-

لصقات كي حمية خاصة

ماء رز عشاب اعشاب

غيرها (اذكر)

من اقترح الامحالة (قبل دخول المستشفى) :-

دايرب صيدلي ممرض

دايرب شخصي (محار) احد افراد العائلة غيرها

لذا قبل بدء الاسهال :-

مع الوصف الكامل ادريقة تعذيب الذا كم وكيفا رمي بنى به

.....

.....

.....

رعاية من الام فقط من الام حليب صناعي

حليب صناعي سائل آخرى

غذاء مساعد داري طعام العائلة

((٤))

الشهية وقت الاسهال :-

تلتزم زاد ت لم تتنا
 الحالة الذاتية : بدین طادی نعيل خزيل
 درجة سوء التذية (بمقياس غريزي)
 التناقص :-

الثلاثي : جرعة اولی ثانية نائمة مشطحة
 الثلث : جرعة اولی ثانية نائمة مشطحة
 الحصبة : السل
 غيرها (اذكر)

الفحص السريري

عوائد اقل الجسي : الطاويل الوزن محيط الرأس
 الطين : للطاول للوزن لمحيط الرأس
 الوزن عدد الخروج : بالطين
 تداور اقل العقل الحركي : دايعي متخلف
 النجس الكصيري : الحدد (بالدقيقة)
 دايعته : قوى ضعيف غير منسوس
 التفسر : عدد المرات بالدقيقة
 دايعته : سريع سداي عميق
 درجة الحمارة من الشرح) : ° م
 ضغط الدم :
 الجسد :

الشعوب : نعم لا
 الاثقل : نعم لا
 الاثقل : نعم لا
 الزمسة : نعم لا
 الحروق : نعم لا
 آثار لمنتجات نعم لا

علامات الجفاف :-

٢	١	مفسر
ضعيف جدا	ضعيف	١- تمسح الجلد : طابيض
فأثرة جدا وجافة	فأثرة	٢- كرة العين : طبيعية
مخفوض جدا	قليل الانخفاض	٣- اليافوخ : طابيض
متجمدة	_____	٤- الاصابغ : طبيعية
جاف	قليل الرطوبة	٥- اللسان : يسيل لحابا
العين جافة	_____	٦- الدمع : موجود
موجود وغير قادر على الشرب	موجود	٧- العفاش : غير موجود
خامل	متهيج	٨- النشاط : نشيط
سريع وستاحي	سريع وعميق	٩- النفس : طابيض
لم يبول منذ	كمية قليلة	١٠- التبول : كمية طبيعية
مشوش	خيل	١١- الوضع الذهني صاح
غير معسوس	سريع وضعيف	١٢- التبول : طابيض وقوى

درجة الجفاف :-

تصاني درجة الجفاف حسب العلامة الثالث :-

صفر : لا يوجد جفاف	١- جفاف بسيط
أقل من ٥%	٢- جفاف متوسط
٥- ١٥%	٣- جفاف متوسط الشدة ١٠- ١٥%
١٥- ٢٥%	٤- جفاف شديد جدا وصدمة فوق ١٥%

System Examination

عن الأجهزة :

القلب	الصدر	الصدر
الربو	الربو	الربو

((٦))

(يكتب كلمة طبيعي (N. A.) او تذكر الحالات السريرية اذا وجدت وتقبل الكتابة بالحريية او الاليزية)

Eyes

العيون :

Cornea

القريبة

Pupils

البؤبؤ

Conjunctivae

الملتحة

Fundus

قعر العين

Other (specify)

غيرها (حدد)

Ear, Nose, and Throat

الاذن والاذان والحنجرة :

N. E. and T., M.

الاذن الوسطى والدايلة

Pharynx

البلعوم

Nose

الارف

Other (specify)

غيرها (حدد)

Lecaster System

الجهاز الحركى :

Joints, Muscles

المفاصل

Bones

العذلات

Hips

العظام

Other (specify)

مفصل الورك

غيرها (حدد)

Respiratory System

الجهاز التنفس :

Breath Sounds

الاصوات الرئوية

Cripitations

الخراخر

Wheezing

الصفير

Other (specify)

غيرها (حدد)

Cardiovascular System

Location of Apex Beat

Heart Sounds

Murmurs

Other (specify)

الجهاز القلبي الدزراسDigestive System

Abdominal Distension

Liver

Spleen

Bowel Sounds

Ascitis

Hernia

Other (specify)

موقع قمة التقة

الاضرابات القلبية

النتجات

غيرها (حدد)

الجهاز الهضمي :-

انتفاخ البطن

الكبد

الاسعال

اضرابات الامعاء

عين

فتق

غيرها (حدد)

Genito-Urinary System

Kidneys

Genitalia

الجهاز البولي التناسلي :-

الكلى

الاعضاء التناسلية

Nervous System

State of Consciousness

Mental Development and Speech

Motor Function

Muscle Tone

Neonatal Reflexes

D.T. Reflexes

Sphincter Control

Diagnosis:

Notes:

Doctor's Signature:

Doctor's Name:

Date:

درجة الوعي

التطور العقلي والتكلام

الحركة

المضوية العضلية

العكسات الجذبية

العكسات الوترية العميقة

ذباب الصمات

التشخيص:

ملاحظات اخرى:

توتيق الارباب:

اسم الارباب:

التاريخ:

Appendix E

INSTRUCTIONS IN ORT FOR MOTHERS
(Draft, In Arabic)

BEST AVAILABLE DOCUMENT

الجمهورية العربية السورية

وزارة الصحة

مديرية الرعاية الصحية الامامية

برنامج مكافحة الاسبالات

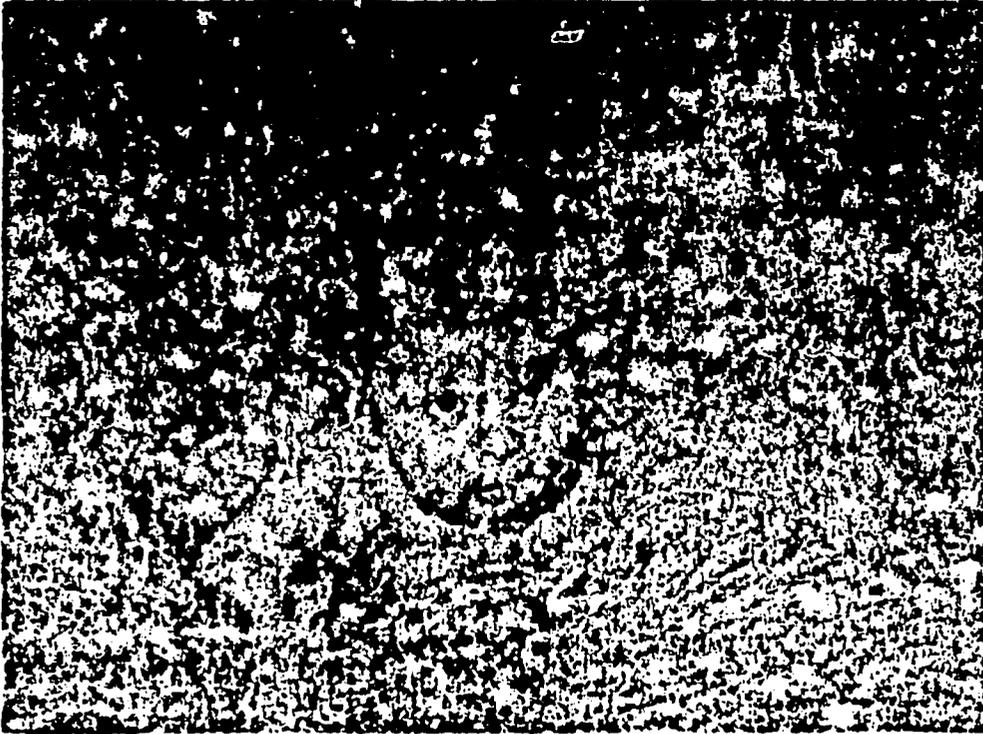
مراكز التوعية عن طريق الفم

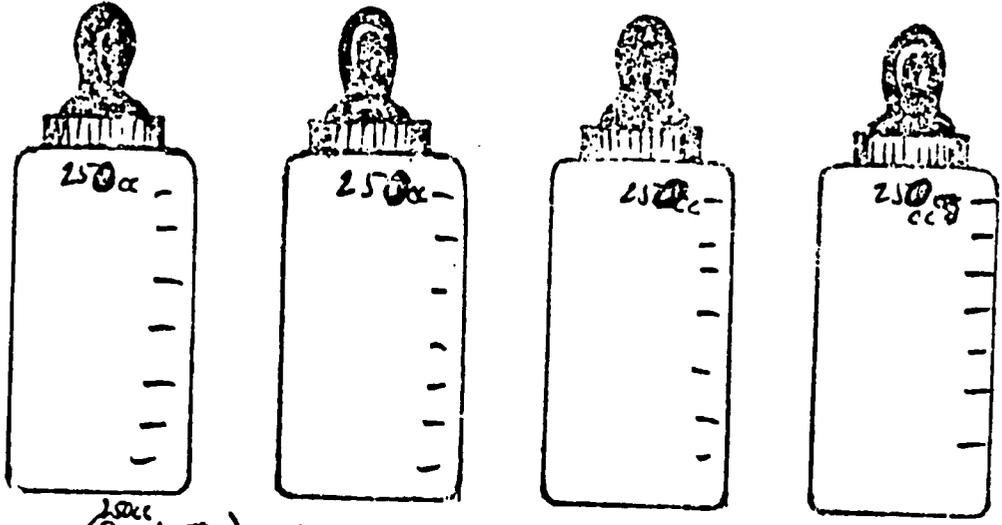
الامامه

اسبالات الاطفال

(التوعية والوقاية)

الامامه





٤ زجاجات رضاعة تساوي لترا (٢٥٠٠ cc)

حاذري ان تضيفي اكثر من باكييت مسحوق الى اللتر الواحد من الماء

٢ - حركي المحلول حتى يذوب جميع المسحوق •

٣ - تذوقي المحلول •

في النسبة العادية يكون طعم المحلول خفيف الملوحة مع شيء من

الحلاوة •

فحص الطفل وتقدير حاجته من المحلول : *How much to give the child*

لتقدير مدى حاجة الطفل الى المحلول افحصي جلد الطفل وعينييه

وراقبي برازه •

١ - افحصي جلد الطفل في ظاهرة يده يمسك الجلد بين ابهامك وسبابتك

وارفعيه ثم اتركيه وراقبي سرعة عودة الجلد الى مستواه الطبيعي :

في حالة الجفاف يعود الجلد الى مستواه العادي ببطء شديد • كما

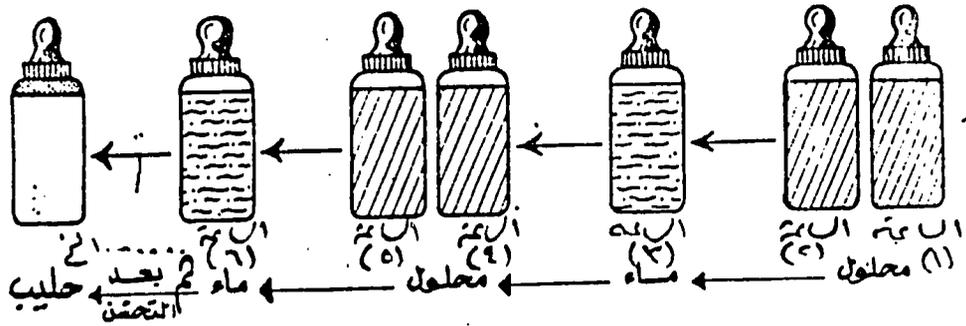
تكون عينا الطفل غائرتين •

ملء زجاجة الرضاعة) في كل مرة اذا كان عمر الطفل اكثر من
ثلاثة شهور وبفاصل ساعة بين الرضعة والآخرى .

اما اذا كان عمر الطفل اقل من ثلاثة شهور فاعطيه نصف الكمية
(اي (١٢٠) سس = نصف زجاجة الرضاعة) في كل مرة
وبعد اعطاء الرضعتين وبفاصل ساعة بينهما اعطي الطفل
زجاجة ثالثة من ماء الشرب العادي .

ومن الافضل ان تكون السوائل التي تعطى للطفل فاترة ويجب
ان يتم اعطاء هذه السوائل الى الطفل في الساعات الاولى من
ملاحظة علامات الجفاف وبمعدل زجاجة واحدة في الساعة .
في حالة رفض الطفل اخذ هذه المحاليل بواسطة زجاجة الرضاعة
فيمكن ان تعطيه ذلك بالمعلقة والفنجان .

استمري باعطاء المحلول وماء الشرب وبنسبة زجاجتين من
المحلول ثم زجاجة من الماء العادي (حتى يعود جلد الطفل وعينه
الى الحالة الطبيعية وعندئذ توقفي عن اعطاء المحلول والماء
واعطي الطفل الحليب .



عودي الى ارضاع الطفل من صدرك او اعطيه الحليب بواسطة
زجاجة الرضاعة على ان يكون الحليب مخففا بالانصاف
تركيزه المعتاد .

واستمري بذلك كل ثلاث الى خمس ساعات . بالاضافة الى

اعطاء الماء والعصير بين الوجبات
الرضاعية

Appendix F

PHOTOSUMMARY OF EVALUATION TEAM'S VISIT
(March and April 1981)

Appendix F

PHOTOSUMMARY OF EVALUATION TEAM'S VISIT (March and April 1981)

1. Ms. Sullesta with members of Al Bashir Pediatrics Department Oral Therapy Unit. (Rear, L to R: Dr. Awai, Resident; Dr. Abu Dahab, Chief of Pediatrics, Dr. Jalal, National Oral Therapy Coordinator; Front: L. Ms. Sullesta, R, Dr. Hamida.



2. Al Bashir Hospital Pediatrics Residents assisting in data tabulation and analysis, series of 750 oral therapy cases.



3. Ms. Sulleiman, Dr. Jalal and Dr. Abu Dahab reviewing data



4. Ms. Haddad, Chief of Nursing, Pediatrics, Al Fakhir, with Pediatrics Resident,



5. Diarrhea patient treated with oral therapy with mother helping. Al Fashir.



6. Oral Therapy nurse (Ms. Frocina) on Oral Therapy Unit. Note low caseload this time of year.



7. Dr. Morani, Chief of Pediatrics, Irbid Hospital, with diarrhea patient on Irbid Oral Therapy Ward. Note bottle of oral solution next to diaper box. Register indicated over 160 inpatients had been so treated during last 4 months.



8. Dr. Jalal on visit to Madaba Hospital Oral Therapy Unit discussing aspects of management with Madaba hospital Oral Therapy Unit Doctor and nurses.



9. Irbid Oral Therapy and Pediatrics ward staff with Oral Therapy Register.



10. Madaba Hospital; patient taking oral solution.



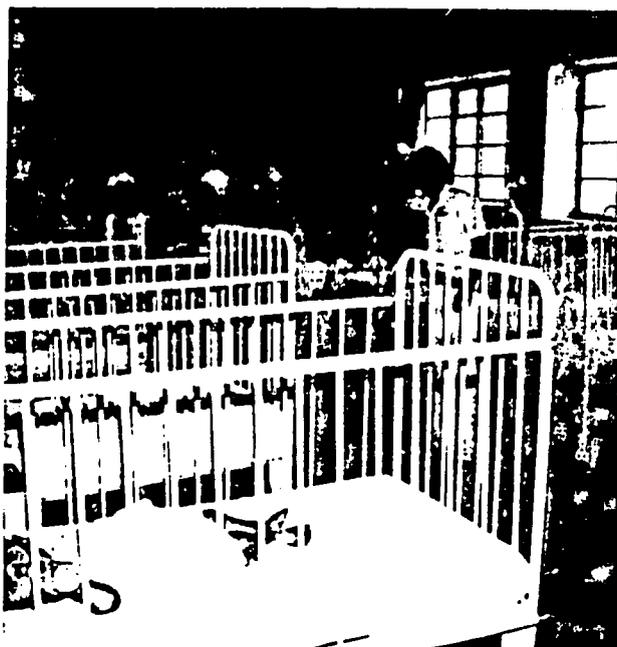
11. Madata Hospital Oral Therapy Unit. Juice for oral solution, plain water, and graduated cylinder to measure out water for oral solution. Bottle warmer in background.



12. Spinoff on general ward, Al Rashid; mothers allowed to help with treatment of their children,



13. Proposed larger ward at Al Bashir for Oral Therapy Unit. Adjacent small room can be used for Nutritional Intervention Subunit (not shown.)



14. Kitchen at Al Bashir used to prepare feeds. Separate refrigerators (two), space and sealed cupboards are needed for separate storage of high energy formula, ingredients, vitamin and mineral stock solutions.

