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**NOTES FROM THE FIELD**  
**AID-SUPPORTED ORAL REHYDRATION THERAPY ACTIVITIES**

prepared for the  
Agency for International Development  
Office of Health  
Bureau for Science and Technology

by  
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For nearly a quarter of a century, the United States has generously offered resources and know-how to give a better, healthier life to ill and malnourished people throughout the world. Despite past efforts and progress by the United States and many other countries, over 40,000 children in developing countries still die every day, victims of malnutrition and disease. This is a tragedy of global proportions and requires a global effort in response.

**—President Ronald Reagan**

We ask the world community and we pledge our efforts to make substantial progress to having [oral rehydration] therapy widely available within five years. We challenge each developing country government to determine specific goals for ORT use in their land. Worldwide doubling of the use of ORT each year for the next five years is a reasonable goal.

Further, we ask the world community and we pledge ourselves to the effort to attain near universal availability of the therapy within ten years. These are practical goals, goals that must be achieved.

**—AID Administrator M. Peter McPherson**

The discovery that sodium transport and glucose transport are coupled in the small intestine so that glucose accelerates absorption of solute and water was *potentially the most important medical advance this century*.

**—Lancet, 1978, ii, 300**

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## ABBREVIATIONS USED IN THE REPORT

ADRA	Adventist Development Relief Agency
AID	Agency for International Development
CARE	Cooperatives for American Relief Everywhere
CCCD	Combatting Childhood Communicable Diseases
CDD	Control of Diarrheal Diseases
CRS	Catholic Relief Services
EPI	Expanded Program for Immunization
FP	Family Planning
FPP	Foster Parents Plan
HEALTHCOM	Communication for Child Survival Project (formerly Mass Media and Health Practices Project)
HOPE	People to People Foundation (Project Hope)
ICC	International Child Care
IEC	International Eye Foundation
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
ICORT	International Conference on Oral Rehydration Therapy
MMHP	Mass Media and Health Practices Project
MCH	Maternal and Child Health
MIHV	Minnesota International Health Volunteers
MOH	Ministry of Health
OPG	Operational Program Grant
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PCI	Project Concern International
PHC	Primary Health Care
PRICOR	Operations Research on Primary Health Care
PRITECH	Technology for Primary Health Care
PVO	Private Voluntary Organization
SAWSO	Salvation Army World Service Office
SCF	Save the Children Federation, Inc.
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
VHW	Village Health Worker
WHO	World Health Organization
WVRO	World Vision Relief Organization

# INTRODUCTION

The Agency for International Development (AID) is committed to providing basic health care to underserved populations in developing countries. The present focus of AID's strategy in primary health care is to support cost-effective technologies that reduce infant and child mortality significantly. Oral rehydration therapy (ORT) and immunization programs have therefore received increasing emphasis. In 1983, following the International Conference on Oral Rehydration Therapy (ICORT) in Washington, D.C., the Administrator, M. Peter McPherson, directed the Agency to make a special effort to strengthen and expand ORT programs wherever possible. Through new program development, bilateral projects, operational and applied research, support to other organizations, conferences, and publications, AID has led a concerted effort to see ORT used globally as the first line of treatment in diarrheal diseases.

Worldwide, diarrheal diseases account for roughly one-third of deaths during childhood. In some countries, half of all deaths in children are associated with diarrhea. Substantial reduction in mortality associated with diarrheal dehydration through effective use of ORT is a major goal of the Agency. AID emphasizes feeding and nutritional recuperation as elements of the therapy that can produce mortality reduction benefits and improved growth and development in children.

Since the 1970's, many AID-assisted health programs have included ORT. Other interventions for diarrheal disease control, particularly improvements in water and sanitation, nutrition, and breastfeeding promotion, have continued to receive strong AID assistance. Present support for research in diarrheal disease includes development of more effective oral rehydration salts (ORS), the development of a vaccine against cholera, improved dietary management of diarrheal diseases, operational research on ORT programs, and applied diarrheal disease research. In fiscal years 1983, 1984, and 1985, ORT activities worldwide received \$12.7 mil-

lion, \$18.6 million, and \$35.8 million, respectively, in assistance from AID. In 1985, the Agency launched the Child Survival Action Program with additional funding from Congress. A major focus of this program is on the support of ORT programs worldwide.

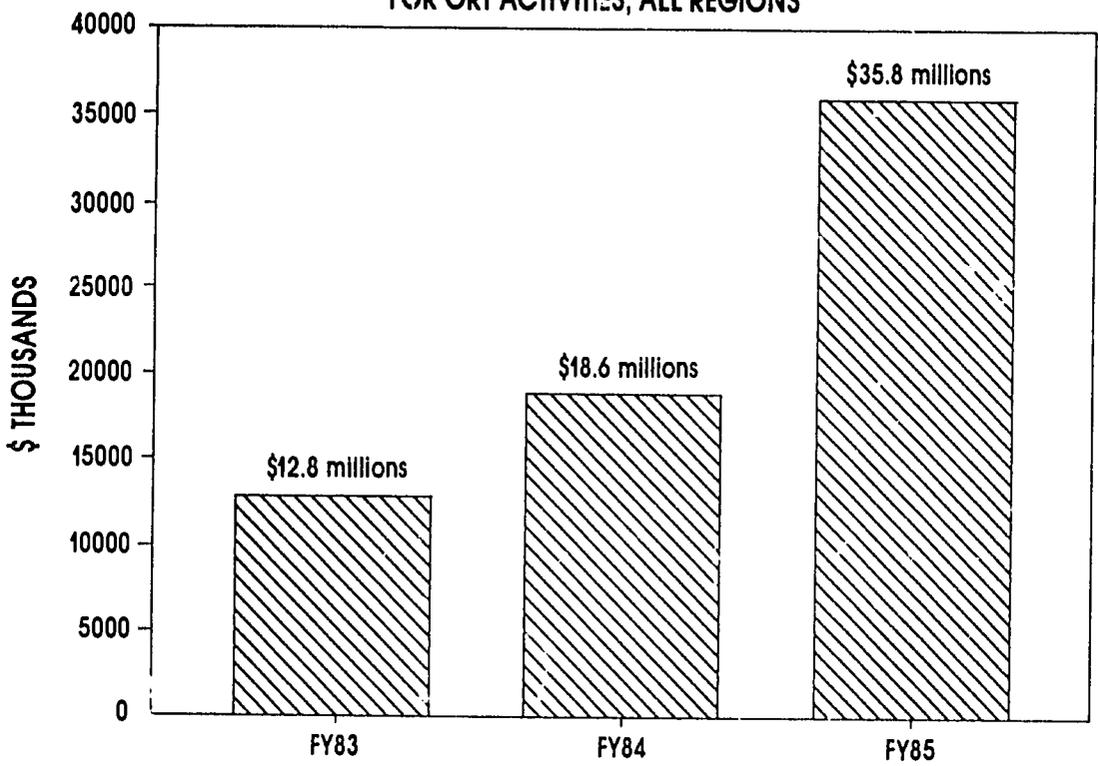
AID has had more than 15 years of experience in planning, implementing, and evaluating projects that have involved ORT activities. This document reviews selected programs in more than 20 countries where AID has provided assistance. Examples range from fully AID-funded projects to findings of AID-financed technical evaluations or operational research studies. It includes large-scale programs as well as small pilot efforts. These broad-ranged examples, it is hoped, will provide implementers with insights and new ideas on common implementation problems and attempted solutions.

Much can be learned by sharing our experiences with one another. This report attempts to assemble and present information on ORT programs in a usable, readable form for field implementers. Most of the text consists of examples from various programs, projects, or studies. The emphasis was placed on field experience, since there seems to be a general lack of knowledge of what others have done in this area. It is not within the scope of this document to extensively evaluate or analyze these efforts. We have provided a list of supporting references for those who would like further information. In order to coordinate with the Second International Conference on Oral Rehydration Therapy (ICORT II), the topics follow those chosen for the Conference.

While each country and each program faces a unique set of constraints, knowledge in the areas of concern and the problems that have occurred in other ORT programs worldwide may help the implementers avoid or overcome similar problems. We hope this report will contribute to this effort.

**—Dr. Kenneth J. Bart**  
**Agency Director for Health**  
**Agency for International Development (AID)**

**ESTIMATED A.I.D. EXPENDITURES  
FOR ORT ACTIVITIES, ALL REGIONS**



**FISCAL YEAR** Source: ORT Data Base (Health Projects DB)  
Date: 10/31/85

# I. COMMUNICATIONS AND SOCIAL MARKETING

One of the greatest challenges facing diarrheal disease programs is in the area of social marketing and communications. Years of work have been spent in the development of oral rehydration therapy (ORT). The technique has been proven effective and reliable but actual awareness, access, and usage rates remain extremely low.

Over the years, experience has shown that ORT programs must have an effective communication component in order to reach large populations with key messages. However, many countries have not placed a high priority on public health education or on social marketing. Also, people who need to know about ORT the most are often the hardest to reach with any information.

AID-assisted activities succeeded in reaching these target groups in projects in Honduras, The Gambia, Egypt, Ecuador, Peru, Haiti, and Swaziland. Many of these projects have increased mothers' awareness and knowledge of ORT, ability to mix ORS and knowledge of when to take the child to a health worker. Because of these gains, mothers have increased their correct use of ORT and improved their feeding practices during and following diarrhea. Experiences of implementers in programs are summarized below.

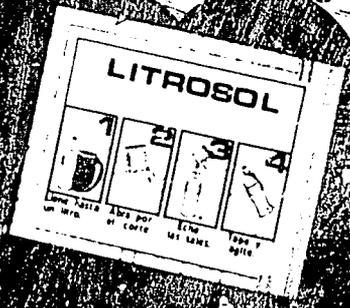
## USE OF MEDIA

Effective messages, selection of media, and media scheduling must be based on the needs and experiences of mothers and households (the consumer), rather than the health establishment or educator. Programs need to change from *telling* people what they want to *asking* people what they want. A range of social marketing and social-science tools were used in various projects to understand the audience better, including focus groups, audience analysis, market segmentation, pretesting, and formative evaluation. Another effective characteristic of social marketing in ORT programs is the use of

a variety of promotional strategies and activities not only to inform audiences about ORT, but to motivate them to try it and to keep using it.

- **The Gambia and Honduras.** Programs took nine months in each site to adequately explore existing health practices and concerns exhaustively, using focus groups, surveys, and observation. Radio and print materials were developed using the language, images, voices, and concerns of the rural people they were intended to reach, and then pre-tested among these people.
- **Honduras.** Since rural Honduran mothers did not have an existing concept of dehydration, the implementers were alerted to the need to present LITROSOL (the ORT product) as a tonic for restoring appetite and activity to the child.
- **The Gambia.** Gambian mothers were found to have a tenuous grasp of the concept of dehydration. The project clarified this concept and presented ORS as a treatment for preventing dehydration and its tragic consequence.
- **Haiti.** The project message initially promoted ORT "to save your child." This had to be later changed to "use ORT to refresh your child" or increase energy and appetite, which were the mothers' prevailing concepts regarding recovery from diarrhea.
- **Egypt.** Sociologists, anthropologists, market researchers, and clinical researchers studied attitudes, knowledge, and practices in developing a product name and logo. Mothers rejected those that were abstract and not readily understood. Some colors were rejected as culturally inappropriate. Some potential product names were rejected by mothers because they were foreign and had no meaning to them. The mothers accepted

# ¡LITROSOL...!



## PARA QUE NO MUERA DESHIDRATADO POR LA OBRADERA

the Arabic name "Geffaf," which was coined to describe the generic condition of diarrheal dehydration, thus helping to create a market for ORS. Other names were accepted by mothers but rejected by doctors because they did not "sound like medicine." The most descriptive name, "Solution for Dehydration," was finally accepted. The logo most liked was a simple line drawing of a mother giving her infant ORS from a cup.

## REINFORCING THE MESSAGE

Since a long-term goal of communication programs is to change behavior, media presentations must reinforce the desired change. Rather than presenting broad, undefined programs, effective communication efforts presented a set of detailed messages on actionable and reinforceable behaviors. Reinforcement through integrated channels using face-to-face communication, skillfully scheduled radio, as well as graphs and other visual presentations, was key to success. Creative use of contests and lotteries also proved to be effective.

- **Honduras.** In the breastfeeding campaign, mothers received certificates of recognition for completing questionnaires on nine rules of breastfeeding. Mothers became members of a prestigious AMA-MAS club when they participated. The theme of the entire ORT program was highly positive, reinforcing "what good mothers do" with a loving mother and heart as the logo.
- **The Gambia.** The Happy Baby Lottery provided incentives to mothers to learn how to perform ORT correctly. There were chances to win prizes as well as recognition in a highly publicized national contest.
- **Haiti.** The mass media and face-to-face education emphasized the observation of mothers that children regain their appetite sooner with ORT.

Lack of appetite had been found to be of grave concern to mothers.

- **Egypt.** A well-liked and respected actress, also a mother, was chosen to star in the ORT messages on television. The vocabulary used, the way she dressed, and the accompanying visuals were designed to make the audience identify with her and heed her advice.
- **Peru.** Mothers continued to breast-feed during diarrhea, but stopped other foods. The program message strategy complimented mothers on knowing that breastfeeding is advantageous but also taught specific weaning foods appropriate for feeding during diarrheal episodes.

## BUILDING ON BELIEFS

In ORT programs, medical anthropology tools were particularly useful in identifying and interpreting existing beliefs about disease causation, perceptions of types of disease and disease severity, and patterns of treatment behavior. They helped recommend which deleterious perceptions or practices were most amenable to change or which advantageous beliefs and customs could be augmented. The language or terminology that should be used to convey the appropriate messages was also suggested.

- **Swaziland.** Ethnographic research conducted by a medical anthropologist revealed that mothers felt that diarrhea treatments should "return or maintain balance to the body." This concept of "restoring balance" was used in the campaign. Also, decision makers learned that traditional healers were the first source of treatment for most infants with diarrhea and agreed to incorporate traditional healers in the strategy.
- **Egypt.** Anthropological research findings were used for script writing and at various stages of pretesting.
- **Bangladesh.** Traditional beliefs about disease producing and ther-

apeutic characteristics of weaning foods were identified so that feeding messages could be successfully structured to build on prevailing practices.

- **Mauritania.** Local treatments for diarrhea included drinking milk or water in some form. Village health workers are being trained to use ORT—both home mixes and ORS packets. For each language group, a medical anthropologist spent 12 to 14 days examining local diagnoses and treatments for common illnesses.

## SUPPORT BY HEALTH PROFESSIONALS

The success of a communications campaign for ORT appeared to rely heavily on supportive and adequately trained and oriented health care personnel.

- **Egypt.** The campaign success was partly attributed to securing the consent of medical authorities on the technical content of campaign messages. Considerable time and effort were spent on reconciling differences of opinion among the various medical authorities. No message was presented without their technical review and approval. In addition, research activities were undertaken to identify media channels most used by physicians. Program formats, messages, and print materials were specifically designed to influence them.
- **Honduras and The Gambia.** Mothers and caretakers needed to learn the fundamentals of mixing and administering ORT. But the support of medical professionals for home-based ORT was important for the institutionalization of ORT within the public health care system.
- **Haiti.** Early efforts were made to introduce ORT to the periphery through distribution of packets and instructions for their use. The attempt proved relatively ineffective because intra-

venous therapy, antibiotics, and anti-diarrheals remained the treatment norm at the respected higher level referral facilities. Thus, the establishment and smooth running of oral rehydration units in fixed facilities was a critical part of the strategy.

## COMMUNICATION AND HOME MIXES

Communication messages must be consistent in order to be reinforcing in their effect. Developing communication strategies on home mix solutions was a major challenge for communication efforts. Guidance on composition of home preparations was often inconsistent or inappropriate. For home mixes to be effective, adequate volumes must be prepared of a fluid that has roughly correct proportions of water, sugar or starch, and salt. Careful, country-specific research was needed into availability of mixing containers and ingredients (seasonally and year round), as well as acceptability, preparation, and storage methods. Approved, standard home mix formulations needed to be developed and consistently promoted to avoid confusion.

- **Togo and Liberia.** Different projects within each country were recommending use of different home preparations. This resulted in confusion among the professional health community, which did not understand how such a treatment could be based on sound scientific principles. Confusion was also created in the lay public. The CCCD ORT programs currently underway are based on careful study of ingredients, mixing containers, and measuring devices available. Coordination among government officials, various donor agencies, and nongovernmental organizations is being secured so that a clear, consistent message is communicated.
- **Haiti.** A PRICOR study in the Petit Goave health district is working to develop a standardized home preparation that is clinically sound as well as locally acceptable.

- **Liberia.** A pilot test in a PRICOR study area found that a simple sugar and salt solution with orange juice was most available and acceptable for ORT.
- **Peru.** Difficulties in access to ORS packets led to the decision to recommend home preparations in several regions of the country. Initially, the Ministry of Health recommended a formula based on carrot broth, which did not specify salt and sugar proportions. In addition, carrots were not readily available in all parts of the country. It was found that at least five different formulas were being recommended—some at variance with internationally accepted standards. Studies have been proposed to develop region-specific, clinically sound formulations.

## OTHER CHANNELS FOR PROMOTION

Programs needed to involve a variety of channels outside the formal health sector for promoting ORT. These included school children, church leaders, adult literacy workers, and entertainers. Traditional healers and pharmacists constitute two of the most potentially powerful yet often neglected channels for promoting ORT successfully.

- **Haiti.** In the Petit Goave district of rural Haiti, training modules are being developed for health volunteers, teachers, shopkeepers who stock ORS, market sellers, and community leaders. Community Rara bands (for traditional celebrations), church leaders, and community groups are trained to promote ORT. Health staff and educators teach users to prepare and administer the solution and ensure that children with severe cases are referred appropriately.
- **Liberia.** The Ministry of Education is developing a national curriculum in health for use in schools. The Ministry of Health has seconded an experi-

enced health educator to assist. Community studies have identified adolescents as a potential source of health information.

- **Brazil.** In rural northeastern Brazil, mothers of children with diarrhea seek out traditional healers as the first source of care. They are more accessible and credible and have a better rapport than other health workers. Studies showed that they learned how to mix and administer ORT accurately and were an excellent distribution point for ORS solution.
- **Swaziland.** Traditional healers were a highly influential, organized, and respected group that played a key role in achieving increased ORT knowledge and use rates.
- **Haiti.** Pharmacists were included in the national strategy for ORT. However, increased orientation and training were necessary because pharmacists continued to recommend antidiarrheals and other treatments over ORT.
- **Egypt.** Health professionals provided training to a core group of pharmacists at the outset. Additional training and seminars for pharmacists were conducted on a large scale because of their influence in getting mothers to use ORT.

## MONITORING THE CAMPAIGN

Once the campaign is launched, program implementers needed to reconfirm that a sufficiently large segment of the population was actually being covered with the planned frequency and types of messages and that the messages were clear and acceptable.

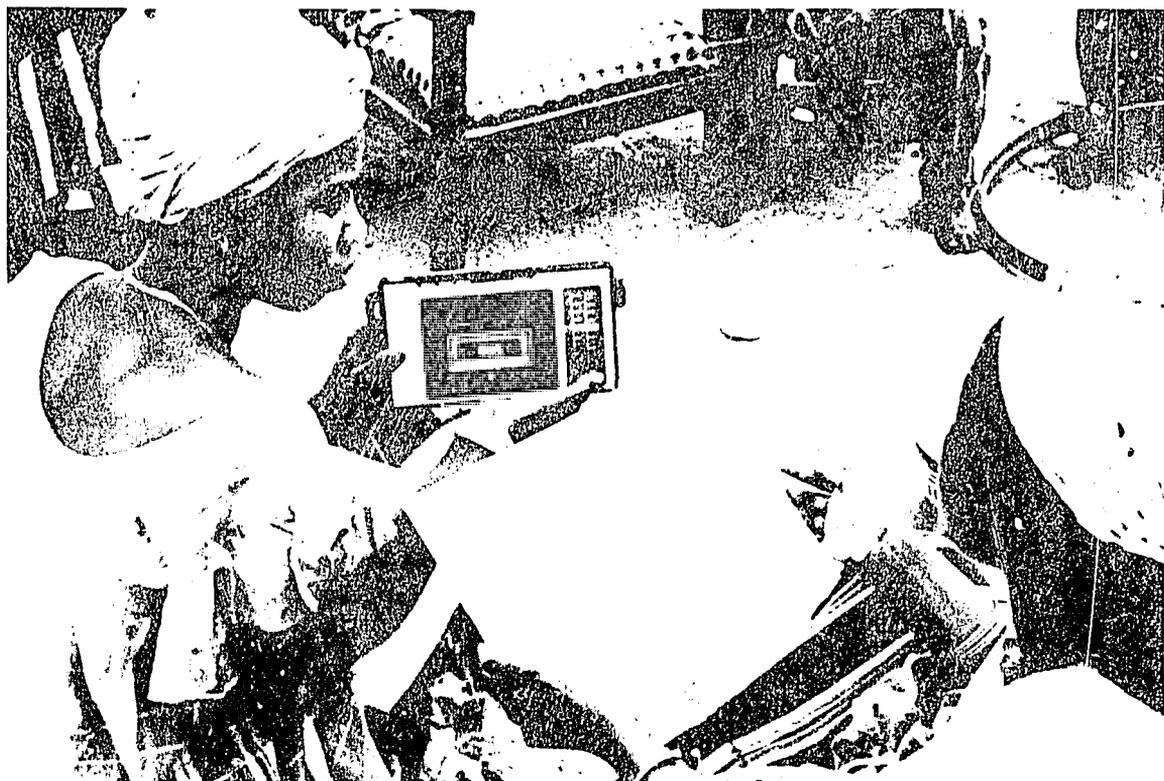
- **Brazil.** In the PRICOR study area, a supposedly “culturally adapted” instructional manual on ORT for illiterate village healers was in fact inappropriate. For example, a picture showing signs of dehydration de-

picted the child sitting rather than lying down. A healing ritual for evil eye needed to be included along with ORT to show that the child was being successfully cured.

- **Haiti.** After the carefully designed and pretested campaign was launched, there was no systematic way to determine the cumulative size of the audience actually reached through various channels, the degree of message penetration, or the reaction of audiences to the message. Problems included confusion arising from an inappropriate slogan ("use ORT to refresh or energize your child" should have been used instead of "use ORT to save your child"), disincentives to buying ORS from pharmacies due to large-scale free distribution at health facilities, and insufficient awareness of ORS selling posts located in neigh-

borhoods. These could have been dealt with much earlier in the campaign and messages or media channels modified accordingly.

- **Honduras.** Individuals located in key areas were asked to systematically monitor frequency, timing, and sequence of radio broadcasts being aired. Reaction of mothers and influential members of the community were carefully monitored in the very early stages. Confusion regarding whether or not to breastfeed, stop other foods, etc., could be quickly dispelled through additional messages.
- **Egypt.** The campaign had initially selected a nationally recognized comedian as the voice for ORT messages. Early feedback showed that life-threatening diarrhea was considered too serious a topic to be treated



*Radio and print materials reinforce messages communicated face to face in The Gambia.* Academy for Educational Development photo

by a comic figure. This strategy was then replaced by a more appropriate one. In addition, early feedback was able to indicate the importance of getting widespread approval from medical authorities in Egypt prior to broadcasting ORT messages.

## CONSISTENCY ACROSS CHANNELS

A variety of channels and strategies needed to be used to inform and to motivate the lay public with consistent messages. Integration of these channels proved to be essential for an effective program.

- **Honduras and The Gambia.** Radio messages backed up the health workers who were teaching mothers in groups and one-on-one. Radio reinforced what mothers and health workers had learned, assuring them of the scientific legitimacy of ORT. ORT

began to appear as a widespread social norm rather than a new idea proposed by an individual health worker.

- **Haiti.** The training strategy was developed with the same instructional objectives as the media. The same twelve major points were emphasized in the mass media and in the training course.
- **Egypt.** Different elements of a single message were carefully coordinated, such as content, vocabulary, visuals, formats. Different messages had been organized and phased to be logical and mutually reinforcing. Presentation of messages themselves was coordinated with availability of salts and the schedule of training programs. Television, radio, newspapers, magazines, pamphlets, and local events were used in a coordinated manner.

## II. DISTRIBUTION AND LOGISTICS

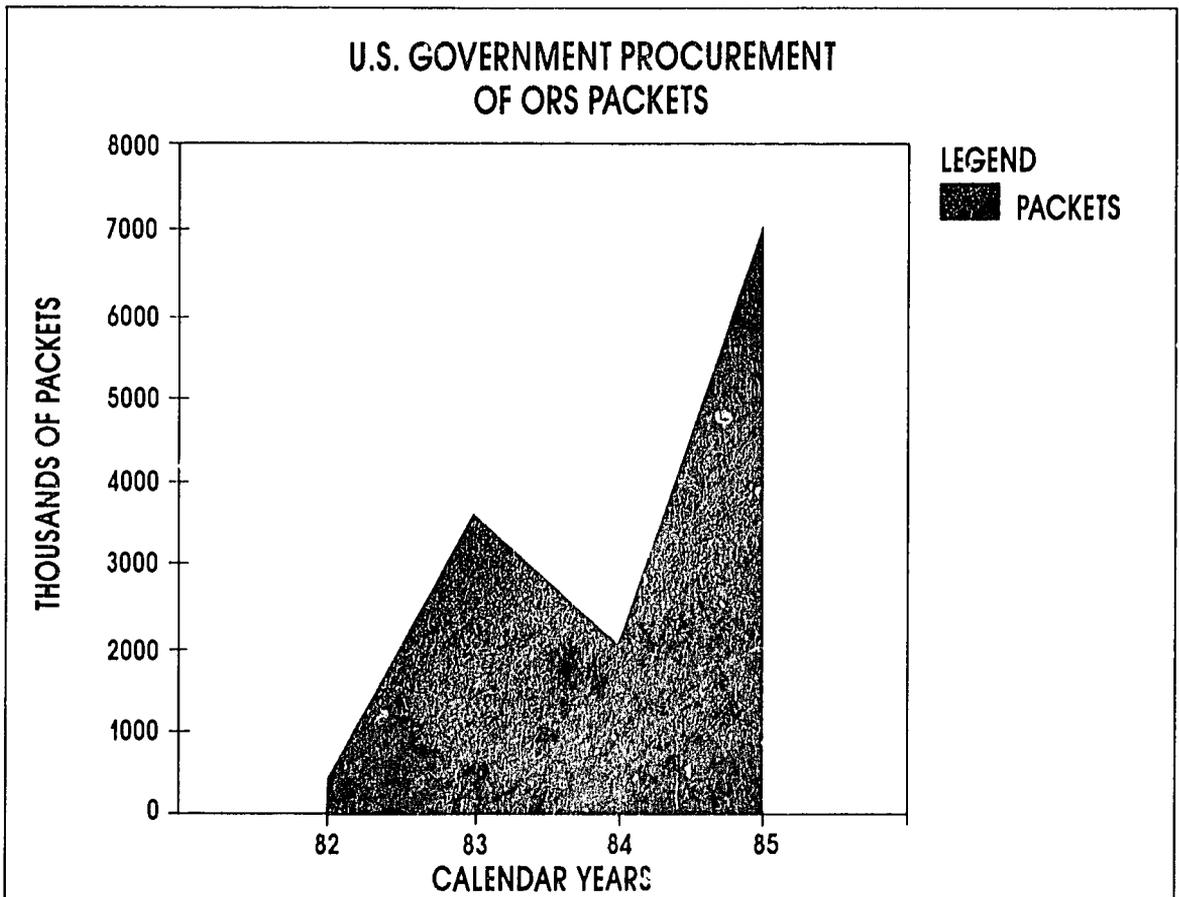
Within the last few years the world output of ORS packets has increased significantly. U.S. government procurement alone has increased from less than 1 million in 1982 to more than 7 million in 1985. Yet only a small minority of populations have ready access to ORS or use ORT in any form. There have been numerous AID-assisted studies that have looked at the constraints that need to be overcome in order to get the packets to diarrhea sufferers.

### MAINTAINING SUPPLIES

The ready availability of ORT supplies and an efficient system of resupply consistent with demand are essential prerequisites for

establishing routine practice of ORT by health personnel.

- **Zaire.** The CCCD project conducted an evaluation 26 weeks after implementation began. One of the problems identified was lapses in availability of ORS.
- **Philippines.** One of the major constraints against widespread use of ORT in health facilities and promotion by health staff was the unavailability of ORS packets.
- **Peru.** While health workers demonstrated awareness of ORT, lack of ORS supplies prevented their practicing it widely.
- **Senegal.** A review of health facilities revealed that ORT awareness was fairly widespread. ORS packets were not.



## SUPPLY AND DEMAND

Many studies found that supply and demand were not coordinated—calculations of demand were not based on actual use or coverage rates at peripheral levels. ORS supplies already in the pipeline—in warehouses at regional and retail levels—were not taken into account. This led to stockpiling and the risk of high spoilage rates since ORS packets have a finite shelf life. The reverse situation also arose. Demand-generating activities such as mass media campaigns and promotion by village health workers were scheduled without ensuring that health facilities and retail outlets were stocked with adequate ORS supplies.

- **Peru.** Although there was a high awareness level among peripheral health workers and mothers regarding ORT, less than half could actually obtain salts. A lapse in the supply of imported packets was one reason for short supplies. Influential members of the health community were also not promoting ORT. Currently, plans are being made for establishment of local production facilities and widespread training of health personnel.
- **Honduras.** Maintaining and supervising an assured supply of ORS packets was found to be the single greatest problem of the program. The project initially used assistant mayors as distributors to achieve desired coverage.
- **Jordan.** Ministry of Health and relief agencies were found to have stocks for a one-year supply of ORS because earlier calculations were based on estimates of two diarrhea episodes and two liters per episode for the total under-five population. When actual coverage rates (starting with 40 percent in 1984) were factored into the calculations, it became apparent that actual demand was lower. The new local production schedule will take into account changes in coverage rates.

- **Egypt.** When existing stocks in warehouses and at health facilities were taken into account, planned production and procurement was reduced sharply. Private sector outlets used a system of requisitioning stock based on actual offtake from pharmacies; they were thus more efficient in coordinating demand and supply. The public sector method of shipping supplies to health centers based on higher than actual estimates of use caused a backup of supplies in the pipeline.
- **Pakistan.** Government incentives were initially effective in generating local production. However, lack of promotion and very low sales from retail outlets caused a backup of supplies. The program is currently focusing on a national ORT promotion campaign.

## COMMERCIAL DISTRIBUTION

Distribution of and access to ORS could be greatly increased through the use of commercial channels. These included both channels that have traditionally carried health products, such as pharmacies, and other outlets, such as tea-stalls, provision stores, traditional healers, and homes of teachers, community leaders, and volunteers. Initial consignments of ORS packets provided free of charge to sellers helped establish a revolving fund for resupply.

- **Philippines.** An AID-financed study found that one of the most limiting factors in widespread use of ORS was its unavailability through commercial channels. The approved ORS formulation was limited exclusively to MOH facilities where health personnel were not fully practicing or promoting ORT. The commercial sector was marketing several very highly priced formulations that were not clinically appropriate. Production of ORS solely by the public sector was

also found to be limiting and could not meet projected demand. Commercial production and marketing through the private sector are now being considered.

- **Haiti.** The local manufacturer undertook to supplement the existing network of pharmacies and other urban outlets with wholesalers in the larger towns. Neighborhood sales posts were established in which volunteers agreed to sell packets. An initial free consignment of ORS packets helped generate sufficient funds for resupply. Within one year, the local manufacturer produced 620,900 packets and 2,000 village sale posts were established.
- **Egypt.** More than 5,000 private pharmacies supplement the 4,000 clinics and hospitals in the government health system to provide easy access to about 95 percent of the population nationwide. Approximately 60 percent of all ORS is purchased in the pharmacies. The decision to use commercial channels was based in part on the influential role pharmacists play in determining the treatment mode. Continued availability of the product beyond the life of the project was also an important factor in this decision.

## PURCHASE OF ORS

Problems arose when distributors (usually government health workers) not used to charging for drugs or supplies were asked to sell ORS packets. Financial accounting and remittance of funds and attitudes of workers regarding free distribution of health supplies were common problems that must be dealt with before such a system is instituted. The free distribution of ORS packets from health facilities often seriously undermined sales through commercial channels.

- **Dominican Republic.** Through a PRICOR study, a pricing structure was developed to allow manufacturers to

cover costs and yet allow retailers a sufficient margin of profit. Imported packets provided at lower costs were a major concern. Taxing imports to prevent undermining of locally produced packets was found impractical. The present policy calls for free distribution of imported packets to indigent families. This constitutes a potential for widespread free distribution sufficient to undermine local private sector production.

- **Niger.** Because of the national policy of free distribution of drugs, anti-diarrheals and antibiotics would be available free while ORS would be sold. This was a serious concern in attempting to promote ORT. Another concern was the absence of a system for monitoring the collection and use of funds generated from the sales.
- **Haiti.** Free distribution from public sector health facilities was reported to be a major disincentive for pharmacies to carry or promote ORS. Government health facilities were initially given a free supply of packets for sale, so that funds could be generated for resupply. However, no provisions or rules were made regarding accounting for the packets distributed and monitoring the collection of funds. Health workers tended to give out packets free of charge.

## IMPORT PROBLEMS

Even when local production of ORS packets was determined to be feasible, often countries started with distribution of imported packets to initiate the program. Foreign exchange availability, accurate forecasting of needs well in advance, and disruptions in the pipeline are typical problems when using imported packets. Importing ingredients of adequate quality was often necessary for local production and generated the same concerns.

- **Egypt.** Three options were considered for phasing in locally produced

ORS packets so that the program would not be disrupted by gaps in availability. These included: starting with all locally produced packets for private sector requirements and donated packets for government clinics and hospitals; emergency shipment of donated ingredients to allow early start-up of locally packaged ORS; and use of donated packets only at government clinics. In the end the local producer supplied the pharmacies and donated packets were used at clinics.

- **Mali.** The feasibility study showed that local production was practical largely because of locally available packaging material suitable for a citrate formulation in a dry climate. However, production start-up is expected to take 12 to 18 months. Donated packets are being scheduled for use

prior to the availability of locally produced packets.

## PACKAGE SIZE FOR ORS

Decisions regarding packet size needed to be based on careful assessments of how ORS will be mixed and used at home. Many countries opted not to use packets large enough to mix one liter of solution because of the unavailability of one-liter mixing containers in households.

- **Egypt.** A nationwide cluster sample survey of 1,100 mothers showed that the most common size container available and used for feeding fluids to young children was approximately 200 cc. There was no commonly available liter measure, nor a good concept of how large a liter was. Very few mothers thought their babies



*Gambian mother pours ORS into soda bottle.* Academy for Educational Development photo.

could drink a liter in a day. When mothers took the 27.5 gram packets (enough for one liter of solution) home they mixed up cupfuls at a time using varying amounts of salts. When a liter was mixed up, unused quantities were stored overnight with possible contamination and bacterial growth. Other studies in Egypt confirmed that an average of 400 to 500 cc per day was sufficient for keeping a child hydrated. The project decided to produce 5.5 gram packets sufficient for 200 cc of ORS solution and stop the production of one-liter UNICEF packets. Plastic cups of 200 cc are also given free to mothers at government facilities and sold at a nominal price at pharmacies.

- **Jordan.** The local manufacturer is considering the production of a standard cup packaged along with the salts since no single standard container has been identified.
- **Mexico.** A PRICOR study found that the local manufacturer decided to produce a packet for an eight-ounce glass rather than one liter. ORS salts are produced instead of tablets because a preference survey revealed no advantages to offset the higher costs of tablets.

## PACKAGING

Packaging and formulation decisions have been needed to ensure that packets are easy to open and the powder or tablet easy to dissolve.

- **Egypt.** Difficulties in opening ORS packages and in bringing the powders quickly into clear solution were

found for several varieties of packets available in Egypt. Mothers expressed a clear preference for an easily opened package and salts that dissolve readily.

- **Honduras.** Program designers thought that the packet would have to be redesigned to facilitate pouring the ORS into the narrow mouth of a soda bottle. Observations of ORT mixing trials demonstrated, however, that rural mothers had very little difficulty with this task.

## MOTIVATION FOR RETAILERS

When ORS was supplied through commercial channels there was often not enough incentive for pharmacies to promote ORS over antidiarrheals and antibiotics. There was a smaller percentage of profit on ORS.

- **Haiti.** The ORS profit margin was found to be too small, especially in contrast to the antidiarrheal drug market. Retailers derived too little profit from ORS to promote it rigorously. The project is trying an increased focus to find other incentives for retailers to promote ORS.
- **Egypt.** Creating a strong demand in the public and training of pharmacists are strategies being used to overcome the lack of economic incentives to sell ORS. Estimates obtained from clinical use were also used to determine ORS demand and better regulate supplies. Also, results of research sponsored by the project showing the inefficacy of treatments other than ORT are publicized in the medical literature and the press.

### III. HEALTH PERSONNEL TRAINING

Many health professionals do not have the confidence or skills necessary to practice ORT. Health personnel were often not convinced of the efficacy of ORT to treat diarrhea. It appears too "low-tech" compared with intravenous therapy and antibiotics. Incentives provided by producers of antidiarrheals, antibiotics, and other competing therapies act against greater use of ORT. Mothers and families often demand more than advice on home solutions or ORS packets when seeking professional help in treating their child. The following lessons have been learned from various AID projects and studies regarding the training of health professionals.

#### ORAL REHYDRATION UNITS

Hands-on experience in ORT could be effectively provided through systematic teaching at oral rehydration units established

in health facilities to treat diarrhea. These provided skills in the clinical management of different types of cases that were presented at health facilities and skills in communicating effectively with mothers.

- **Zaire.** Efforts to expand ORT use at health facilities throughout Zaire began with the establishment of an "ORT service" at the 2,000 bed Mamo Yemo Hospital in Kinshasa. The CCCD team participated in conferences for pediatric physicians and nurses for technical and operational orientation to ORT. The project provided a start-up kit of mixing bowl and large spoon, cups and spoons for ORS, and forms to be completed for diarrhea cases. The cost of ORS (approximately U.S. \$1.00) was incorporated into the patient fee. Principles of case management are currently being taught through 45 treatment centers in Kin-



*Trained health workers demonstrate ORT in communities. UNICEF photo.*

shasa and outlying areas of the country.

- **Mali.** In 1981, AID spearheaded an effort to establish two oral rehydration units in Bamako. In December 1983, a Sahel-wide workshop on ORT was held for delegates from health ministries in each country. The experiences of the ORT units in Bamako were incorporated into an ORT manual in French and have been widely distributed for establishing Oral Rehydration Units (ORU's) and training purposes. These units assist mothers and paraprofessionals in practicing ORT and help convince health professionals that the therapy is cost effective.
- **Senegal.** Due to promotion of ORT, health workers were by and large found to be aware of and convinced of ORT. But, they lacked practical skills on how to administer it. An AID project is considering provision of basic equipment (weighing scales, I.V. stands, mixing vessels, etc.) to hospitals where OR units could be established for hands-on health personnel training.
- **Egypt.** The organization and functioning of OR units vary with the types of health facility into which they are integrated—hospitals, health centers, maternal and child health centers. Together they perform a number of tasks:
  - diarrhea and dehydration diagnosis and treatment by specially trained staff;
  - initial rehydration provided by mothers under supervision;
  - teaching mothers how to care for their child with diarrhea and how to prevent it,
  - preservice and inservice training; and
  - service-oriented research on diarrhea.

After two years of national implementation, 77 percent of all health facilities in Egypt had functioning OR

units. (By the end of 1985, this number increased to 90 percent.) All OR units receive some equipment and funds for refurbishing facilities. Hospitals also receive supplies for I.V. rehydration including a project-developed polyvalent electrolyte solution. Most physicians in Egypt have been trained through some 30 rehydration training and treatment centers located in Governorate/General hospitals, Faculties of Medicine hospitals, and Ministry of Health teaching hospitals. Project trainers also conduct hands-on training courses in other hospitals that have many diarrheal cases.

## WORK WITH OPINION LEADERS

The use of ORT to treat diarrhea often represented a major shift in traditional attitudes and knowledge. An effective strategy often utilized was to work with opinion leaders in the medical community first and provide them the opportunity to see the effectiveness of ORT for themselves. Several successful national programs began with operational research activities in teaching hospitals.

- **Haiti.** The first OR unit was established at the teaching hospital in Port-au-Prince. Results of ORT on mortality and dehydration were widely publicized and presented at seminars and conferences.
- **Egypt.** Some of the most rewarding activities in the start-up phase of the project were grants given to prestigious teaching hospitals, especially in Alexandria and Cairo. Results showing the benefits of ORT over other treatments were widely distributed. The former Minister of Health, who was an ORT supporter and pediatrician, was asked to visibly lend support at conferences and in the media.
- **Pakistan.** In 1975, UNICEF sponsored an acceptability study in Pakistan to first introduce packets into the country. The government subsequently un-

dertook sensitization of leaders of the medical profession, mainly through training seminars and conferences.

## MASS MEDIA

The mass media such as television, radio, newspapers, technical meetings, and print materials were often effective in sensitizing and reinforcing changes in attitudes and practices of the health community on a large scale.

- **Egypt.** Special audience research was conducted on physicians to mount television and newspaper campaigns that would reinforce ORT use by the health community. All training activities were carefully coordinated with mass media activities to ensure consistent messages and sequencing of media that would help reinforce training of health personnel.
- **The Gambia and Honduras.** Pretests of mass media included health professionals to make sure that messages would reinforce training activities.
- **Swaziland.** Because traditional healers were a key channel for promoting ORT, the mass media were used to reinforce their work with mothers in the communities.

## POLICY CHANGES

Often, even highly motivated and skilled health staff were unable to fully practice ORT because no formal policy endorsed the use of ORT as the first line of treatment for diarrhea.

- **Haiti.** A group of ORT experts who recently visited the Haiti program noted that an official policy allowing mothers or other family members to accompany children on wards 24 hours per day would greatly help more widespread practice of ORT in health facilities.

- **Egypt.** One of the first activities was to gain consensus on a standardized policy for diarrhea treatment in Egypt—both for home treatment and treatment by a health facility. Policies included breastfeeding and feeding recommended during diarrhea, as well as ORT practices.
- **Ivory Coast.** In one study, CCCD found that of 139 women who brought a child to MCH clinics for treatment of acute diarrhea, 99 percent received a prescription for at least one medication other than ORS and over half were counselled to give at least three different medications to the child. Only 40 percent were advised to use ORT. A total of 36 different proprietary preparations, including antibiotics, antihelminthics, intestinal “disinfectants,” antidiarrheals and antiemetics, and intestinal flora replacements, were prescribed.
- **Burma.** Nutritional aspects of ORT were not well recognized. Policies regarding feeding during diarrhea would have helped strengthen ORT effectiveness, especially at peripheral levels.
- **Philippines.** Given the dominant influence of physicians over clinic and hospital practices and disease management policies, it has been considered high priority to sensitize physicians regarding clinical effectiveness of ORT.

## PARAMEDICAL PERSONNEL

While physicians played a key role in setting policy and providing specialized education, it was the paramedical staff such as nurses, nurse-midwives, and birth attendants who actually interacted the most with mothers.

- **Indonesia.** A joint Government/WHO/UNICEF/USAID review revealed that lack of conviction and confidence in administering ORT prevailed at all levels. Many village health workers

were content to distribute packets without efforts at followup or supervising their administration.

- **Haiti.** Considerable variation in health staff competence in using ORT has been recognized. Curricula of schools, including nursing schools, are to be reviewed to strengthen ORT skills.
- **Egypt.** The project learned that it was most cost effective to train nurses and midwives who spend the greatest amount of time with mothers in health facilities.
- **Zaire.** The head nurse was responsible for day-to-day supervision of ORT activities at the ORT unit in Kinshasa's Mamo Yemo Hospital. He also collected patient forms and prepared listings to conduct preliminary analysis of program implementation.
- **Sudan.** The project relies heavily on well-trained midwives to deliver ORT messages through a community-based family planning program. Training includes mixing ORS in a common household vessel, first learning to mark off a one-liter level on the vessel, and teaching mothers the importance of using common weaning foods even during diarrhea. Refresher training is intensified prior to peak diarrhea seasons.

- **Indonesia.** The program review found that many health staff at provincial and Kabupaten levels were unconvinced of the value of ORT and did not understand the technique.
- **Haiti.** OR Units established in health facilities other than the teaching hospital in Port-au-Prince were registering lower effectiveness in treating dehydration. This points to the need for upgrading skills at peripheral levels.
- **Egypt.** Project staff work closely with the governorates and districts to establish rehydration programs nationwide. The 26 governorate coordinators, one in each governorate, are eminent physicians, generally directors of MCH, preventive medicine, or PHC. They work to ensure the availability of services in remote areas. A key activity has been assistance to "Depot Holders" in remote villages of Egypt. People identified as being commonly consulted on matters related to child health were recruited and trained in ORS utilization, feeding, and referral. They maintained 24-hour stocks of packets in their homes and sold them to mothers. The close coordination with the formal health system has been mutually reinforcing. This activity is now underway in four governorates.

## REMOTE HOSPITALS

Mortality rates from diarrheal diseases are often highest in provincial and district level hospitals. These are where most serious cases from remote communities are referred and where facilities, including those for ORT, are most inadequate.

- **Burma.** Training of medical staff at small hospitals in clinical aspects of diarrhea is being emphasized. Private practitioners who are important service providers in districts are being included in plans for training seminars possibly through the Burma Medical Association.

## PRESERVICE AND INSERVICE TRAINING

Inservice training of health professionals and paraprofessionals yielded the most immediate gains. Strengthened preservice training through changes in medical and nursing curricula were found to be important activities as well.

- **Haiti.** An expert group recently recommended an objective evaluation of competencies of all personnel involved in ORT activities. This is to precede a review and standardization of school curricula to ensure that

practical competency in all areas of ORT are incorporated.

- **Egypt.** A cadre of 105 trainers has been recruited and trained in ORT. Included are professors from medical and nursing schools, among others. Training materials include nurses textbooks, 35 mm slide sets, videotapes, manuals, and charts. Every year there are approximately 4,000 new doctors graduated in Egypt and assigned to work in primary health care facilities. The project participates in two-month training courses for them prior to the beginning of their work. Medical school curricula and examinations are being adapted to include new ORT materials for students in schools of medicine, nursing, and pharmacy. The rehydration units of the medical schools are regularly used for the clinical training of these students.

## TRAINING IN MANAGEMENT

The management training content for health personnel needed to include skills in training lay personnel, in conducting community outreach, and in monitoring and supervision.

- **Uganda.** A set of training modules was prepared using the CCCD and WHO manuals as a model. Two levels of training are being offered in every region. One is a mid-level managers course mainly for health personnel responsible for planning, implementing, and monitoring. The second is a course for service providers that stresses clinical skills and communication with mothers. The appropriate selection and assignment of personnel to these courses have been found to be important.

## MULTIPLIER EFFECT OF TRAINING

At the time mothers bring their children to a health facility or a health provider for diarrhea treatment, they are highly receptive to trying new behaviors. Health care personnel often failed to seize this opportunity. Packets were dispensed without explanation on how to use them or without demonstrating the process—crucial teaching steps for mothers to start practicing ORT. When this type of teaching did take place it had a high multiplier effect, with one mother teaching other mothers.

- **Haiti.** The first oral rehydration unit established at the teaching hospital in Port-au-Prince emphasized using mothers as ORT providers in hospital wards and clinics. Over time, this program had a large multiplier effect in the entire community. There was a 30 percent decrease in the number of severely dehydrated children hospitalized even though diarrheal admissions rose by 55 percent. Within one year, there was a twentyfold increase in the number of children who had received fluid therapy at home prior to coming to the hospital.
- **Egypt.** Researchers found that mothers teach other mothers at about 25 percent efficiency.
- **Peru.** Health care personnel often explain how to prepare and administer the solution without demonstrating the process. ORT rooms equipped to teach mothers had limited working hours and mothers referred to other units were not taught about ORT. The program plan now calls for nationwide orientation of personnel in health facilities to both provide and demonstrate ORT when a mother seeks diarrhea treatment.

## IV. SUPERVISION AND MONITORING

Programs for increasing ORT use relied heavily on outreach workers, peripheral facilities including retail outlets, and far-reaching communication channels. Yet decision makers often did not have sufficient understanding of problems to monitor and supervise programs. Implementers sought assistance with allocation of resources, scheduling packets, transportation, personnel, media, and other factors. An efficient monitoring system can answer questions about planning, scheduling, resource allocation, training, supplies, use of media, etc., and their effect on levels of correct ORT use in homes and health facilities. The following were some of the key lessons learned.

### FULL-TIME SUPERVISION

Monitoring and supervision at the national level suffered from a lack of full-time personnel devoted to ORT program management.

- **Philippines.** Adequate monitoring of ORT activities, which were scattered across public and private sectors, was recommended as a key criterion for successful implementation of the new ORT initiative by a PRITECH assessment team. Because of the competing priorities for the time of people managing the program at the national level, planning, supervision, and monitoring of ORT had suffered in the past, leading to low ORT usage. The program could achieve only limited success despite the strong support of the government and the endorsement of clear policies to promote ORT. Close tracking of implementation activities and coordination of efforts to obtain the required logistic support were recommended.
- **Niger.** The National Committee for the Fight Against Diarrheal Diseases has been assigned the task of monitoring and supervising regional level

activities. A systematic monitoring plan is being developed. Members represent key units of the Ministry of Health as well as the Office of Pharmaceutical and Chemical Products (ONPP), which is to supply ORS packets. However, most members were found to be occupied with programs of their own divisions and had little time to conduct the supervisory visits.

- **Haiti.** A full-time administrator had to be hired for liaison between the Government and donor agencies and between the center and regions and districts. Duties include supervision and assistance in disbursement of funds, timely provision of supplies, preparation of contracts, etc. This position is in addition to the Director General of Health, who is himself the program director, with assistance from MCH and Health Education division staff.

### PLAN OF OPERATIONS

Comprehensive operational plans were useful monitoring instruments at the national and regional levels.

- **PRITECH.** Experienced AID consultants on ORT programs had found that most countries needed second-generation plans that would be based on identification of key operational problems in expanding ORT use in each country. Therefore, a detailed set of guidelines for conducting assessments and developing operational programs was developed. National ORT program implementers in Burma, Chad, Djibouti, India, Mali, Niger, Pakistan, Peru, and the Philippines can now monitor and supervise progress in program implementation across sectors, agencies, and levels (central, regional) using the detailed plans that were developed.

- **Haiti.** Quarterly meetings are held at national headquarters at which each unit reports on progress made toward targets set.

## REGIONAL SKILLS TRAINING

At the regional level, the need for hands-on training and orientation to strengthen supervision and monitoring skills was identified.

- **Burma.** A need to strengthen the monitoring and supervisory skills at township health offices was identified by a PRITECH assessment team. Most of the time of these personnel was being spent on curative outpatient care and hospital-oriented work. The objectives and needs of the outreach-oriented ORT activities had not been reflected in their work schedules. A job analysis and reorientation towards monitoring and supervision were recommended.
- **Haiti.** The importance of strengthening monitoring and supervisory skills at the regional level was discovered early in the program. Written instructions regarding use of educational materials, management of ORS packets, and accounting for funds were not sufficient. On-the-job, individual training on monitoring and supervision of these activities was needed.
- **Egypt.** Program coordinators were identified in each of the 26 Governorates. Central program staff visit and help draw up operational plans for use as monitoring tools for Governorate- and district-level activities. The workplan is used as a central monitoring instrument. Each individual technical section had to prepare its own budget, which was then integrated into the overall plan. The coordinators perform a monitoring as well as liaison role for the program.
- **Sudan.** A review of the AID-funded, community-based family health pro-

gram indicated that dispensary personnel who supervise midwives needed a more thorough orientation in ORT preparation and administration and a better understanding of the packet distribution system.

## MONITORING PROGRAM DETAILS

Monitoring indicators needed generally to focus more on details of delivery of services and ORT use rather than aggregate indicators useful only for national or global-level monitoring.

- **Burma.** While data gathering for child mortality and diarrhea morbidity had been strengthened, there was not sufficient emphasis on access to ORS supplies or ORS use. Routine service statistics were recording "treatment given" for diarrhea but did not distinguish between treatment with ORS or antidiarrheals and antibiotics.
- **Communication for Child Survival (HEALTHCOM)** (formerly Mass Media and Health Practices). This project uses an affordable and rapid system for tracking changes in audience awareness, recognition, comprehension, recall, and practice. The system also monitors the volume of materials produced, distribution in media and through personnel communication, and liaison with implementing agencies. Changes that were made as a result of findings include displaying posters in more conspicuous places, broadcasting at more appropriate times, involving new institutions, shifting internal responsibilities and workload, improving distribution systems, and changing the message strategy. The project implementers found that revisions required as much creativity as the original design.
- **Egypt.** The knowledge and understanding of mothers regarding how they need to respond to diarrhea in their children is used as a key indi-

cator of the program's progress. In addition, supplies of packets, training materials, mass media, equipment, staffing, training, record keeping, and numbers treated with OR, IV, and other therapies are carefully monitored at national, regional, health facility, and retail outlet levels. The feeding elements of ORT are also monitored.

## DATA COLLECTION TECHNIQUES

Data collection techniques for monitoring needed to rely more heavily on observation and qualitative methods while focusing on the quality of ORT.

- **Zaire.** At oral rehydration units established under the CCCD project, weighing children was found to be a key instrument to determine whether weight had been restored sufficiently (sign of rehydration) to discharge the patient. A process of frequent data collection and observation followed by conferences was used during the first three months after establishing ORT facilities under the CCCD project. The most common operational lessons identified were:
  - the need for additional training based on the most common problems identified;
  - reinforcement of the importance of weighing children to ensure rehydration was adequate before discharge;
  - proper weighing techniques and maintenance of scales;
  - explaining that ORS can be given in small quantities and frequently even when vomiting is present;
  - methodology for estimating fluid requirements and encouraging increased volumes; and
  - including problem-solving exercises to break the monotony of didactic lectures.
- **HEALTHCOM.** Most useful techniques in the HEALTHCOM project included observation and qualitative techniques such as focus groups to detect possible confusion and impact in the intended audience, monitoring tag lines and program slogans to judge outreach, and discussion panels comprised of influential individuals to assess impact of the program on distributors and implementers.
- **Egypt.** Surveying the knowledge, attitudes, and practices of mothers comprising a representative sample (2,100 mothers at baseline, 525 mothers from the same clusters subsequently) has been a valuable monitoring technique. Changes in knowledge and use of ORT were the key indicators. The project found that after the first year of implementation a large proportion of mothers did not know the correct use of ORS. Based on these findings, the project decided to stress correct mixing and use in 1984 and 1985 mass media campaigns. The program is also monitoring the incidence of hypernatremia among cases coming to a major university hospital. Hypernatremia fell markedly during the project.
- **Haiti.** Even though the pre-campaign stage focused on careful pretesting and message design, the program suffered from not having a mechanism of audience feedback after the campaign was launched.
- **Sudan.** Through observation studies, the volumes of water that each mother used for ORS mixing were key monitoring indicators throughout program implementation. No uniform container was found for mixing ORS; midwives mark one-liter levels on household vessels called *Koreyya* that are used as a guide by mothers. Mini-surveys of households beginning three months after initiation were recommended. Packet supply and training of midwives were identified as important problem-prone areas for monitoring.



*Demonstrations on protein-rich foods suitable for children during and after diarrheal episodes are part of many ORT programs. WHO/WFP photo by G. Totton*

## MONITORING QUALITY AND FEEDING DURING DIARRHEA

The quality of care through oral rehydration therapy needs to be monitored both in terms of mixing and using the ORT formula correctly as well as the feeding elements of ORT.

- **The Gambia.** Separate monitoring indicators and techniques were used to track behavioral changes in terms of feeding during diarrhea and ORS

mixing and use. A series of panel surveys was conducted on mothers prior to and following the media campaign. Indicators chosen to track feeding behavior included breastfeeding and bottlefeeding during diarrhea, gruels and solid foods fed during diarrhea, addition of "power foods" (calorie- and protein-rich supplements to gruels), and frequency of meals after diarrhea.

- **Egypt.** Continued feeding during diarrhea, including breastfeeding,

was monitored apart from ORS use. Despite an increase in malnutrition, rates of diarrheal disease fell.

- **Swaziland.** Intention to feed children special foods after diarrhea is being monitored.

## RESOURCES FOR SUPERVISION

Supervision often suffered from absence of standard checklists or protocols and insufficient resources for transportation.

- **Ecuador.** In the rural health project, there was no nationally standard system of supervision. Therefore, each provincial office developed its own

system of supervising health centers. This, along with lack of per diem and vehicles, restricted the ability of central staff to monitor the primary health care program.

- **Niger.** Unavailability of vehicles greatly impeded supervision of the newly launched ORT program from the central to the regional levels.
- **Peru.** Lack of transportation was found to be a serious limiting factor in supervising health care providers at all levels. The PRITECH assessment estimated that only five percent of government vehicles were on the road at any given time in most parts of the country.

## V. EVALUATION AND COST ISSUES

Evaluation is necessary to determine whether use of ORT is translating into improved health and nutritional status, particularly reduced deaths from diarrheal dehydration. Programs should also be cost-effective as financial resources are limited. Issues identified in AID-assisted programs are discussed below. See the tables on the following pages for the results of evaluations conducted in The Gambia, Honduras, Swaziland, Egypt, and Haiti.

### AGE-SPECIFIC DATA

An important impact indicator was found to be the overall mortality or diarrhea mortality in the 0-to-1-year or 0-to-2-year age group, rather than the 0-to-5-year age group. Disaggregating health status impact by distinct age groups demonstrated that the major mortality impacts of ORT are in the 0-to-1 or 0-to-2-year age group.

- **Egypt.** Since 1980, diarrhea-associated mortality was reduced by two-thirds in children 0-to-2 years old. Infant (0-to-1-year) mortality is estimated to have been reduced by nearly half.
- **Honduras.** The reported diarrheal mortality among children declined substantially. For the 1-to-5-year age group, diarrhea as a cause of death went from 40 percent of all deaths before the campaign to 27 percent after in the target region. For children under one, the rate fell from 40 percent to 23 percent.

### MULTIPLE FACTORS

The use of a combination of mortality and nutritional status indicators has provided some useful insights into the overall environment and effects of ORT programs.

- **Honduras.** The overall nutritional status of children was lower at the end

of the campaign compared with baseline data. This was attributed to the deteriorating economic conditions in the campaign area. Comparisons of a control group in a non-campaign or nonexposed area could have verified this observation. Another reason given was that children who had been saved from death through ORT increased the numbers of children in nutritionally poorer groups. The ORT campaign could not fully compensate for these negative manifestations.

- **The Gambia.** As measured by changes in weight for age, weight for height, height for age, skinfold thickness, and arm circumference, Gambian children in the study sample became progressively leaner and more wasted. This is assumed to reflect effects of the drought and economic crisis, although no comparison group existed to verify this. Furthermore, while the campaign is estimated to have reduced infant and child mortality, it is likely that the children saved did not remain well nourished, thus increasing the numbers who were malnourished.

### PHC SYSTEM BENEFITS

Strengthening of PHC systems was a valuable outcome of ORT programs that should be evaluated.

- **Egypt.** The implementers found that strengthening of the PHC network and a permanent knowledge nationwide about treating and preventing diarrhea were important outcomes that would determine whether the impact of the program could be sustained after the project. Having ORT units in the hospitals were particularly useful, improving the morale of the health staff in general.

## RESULTS OF EVALUATIONS CONDUCTED ON ORT PROGRAMS

### Honduras

Variable	Percentage Before 8/81	Percentage After		
		4/82	8/82—9/82	2/84—3/84
1. Aware of LITROSOL*	49.5	56.5	73.5	79.2
2. Used LITROSOL for episodes in the last two weeks	9.2	26.2	33.3	18.0
3. Ever used LITROSOL	36.7	48.6	60.7	62.4

\*The question asked mothers to name the medicine talked about in the mass media campaign.

### The Gambia

Variable	Percentage Before 8/82	Percentage After		
		12/82—2/83	4/83	6/84—7/84
1. Know of WSS*	55.2	78.3	—	89.3
2. Know correct formula	0.4	41.1	54.1	—
3. Children treated with correctly mixed WSS	0.0	28.5	34.2	46—50
4. Weaning foods stopped during diarrhea	32.0	18.0	9.9	14.6
5. Special foods given after diarrhea	55.0	65.8	83.4	73.7

\*Water-salt-solution

### Swaziland

Variable	Percentage Before 9/84	Percentage After 3/85
Knowledge of new formula	5.0	21.0
ORS use (community survey)	17.0	43.0
ORS use (children brought to clinics for diarrhea)	40.0	60.0
Intention to feed special foods after diarrhea	16.0	43.0

## Egypt

Variable	Percentage Alexandria		Percentage Nationwide			
	5/83	3/84	6/84	10/84	1/85	4/85
Know of ORS	1.5	87.4	69.0	96.0	94.0	—
Ever Used ORS	1.0	36.2	44.0	57.0	50.0	62.6
Recognize ORS Packet	—	—	—	90.0	77.0	88.7
Know Correct ORS Use	—	—	—	59.0	53.0	69.8

## Haiti

Variable	Percentage 1983	Percentage 1985	
		Rural	Urban
ORS Knowledge	15.0	58.0	90.0
USE:			
ORS	2.3	22.3	80.0
Home Solution	Unknown	58.0	7.0
Nothing	32.0	3.0	3.0

- **Haiti.** ORT program outcomes included development of a replicable health education/communication strategy, a decentralized and more effective management system, and a functioning monitoring-evaluation system. The benefits of this PHC strengthening were expected to increase health status impact of subsequent technologies.

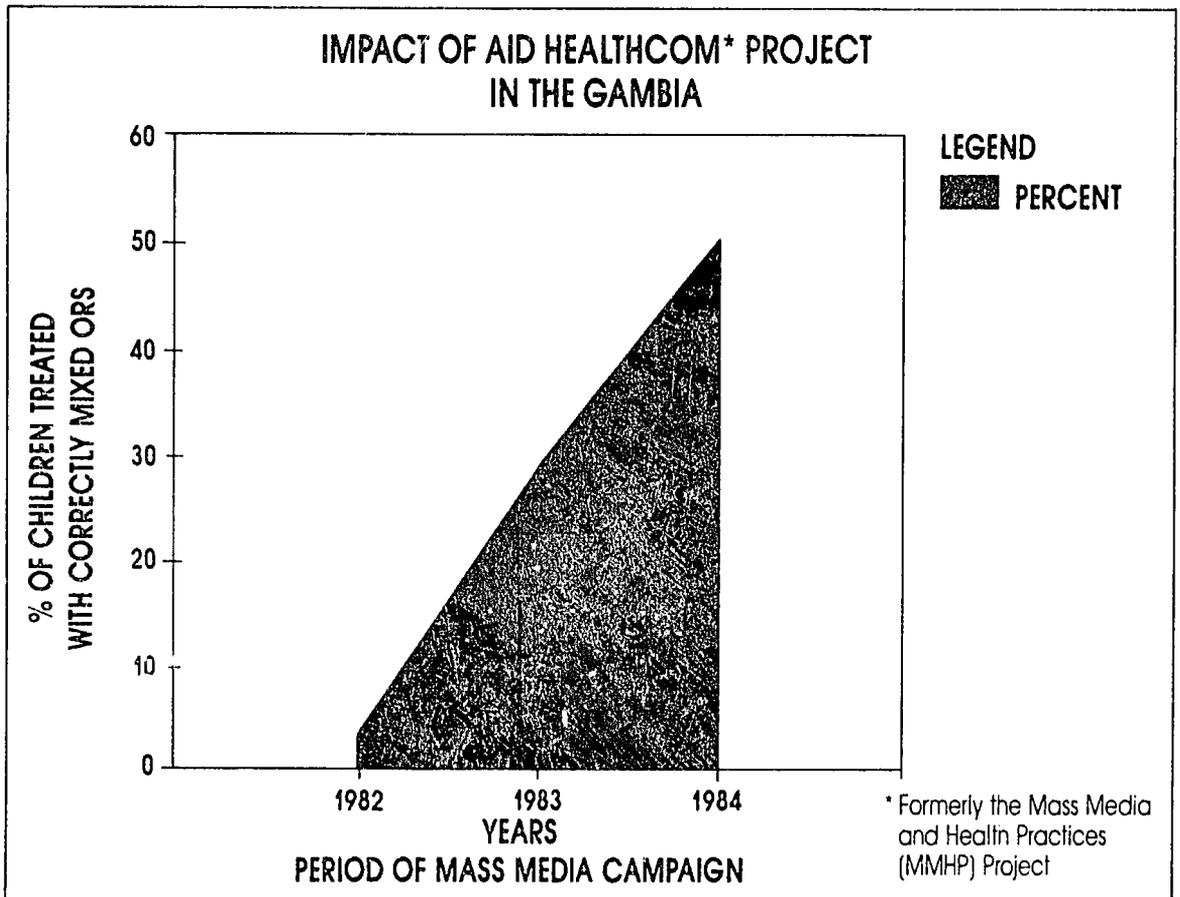
sentinel sites, and a national double-round mortality survey (before and after the peak diarrheal season). The strategy found most effective was to establish baseline information and track changes over time. Annual KAP surveys of mothers, media use and impact studies, and anthropological studies are key sources.

- **The Gambia.** Primarily, large-scale survey data from repeated visits to a panel of mothers of small children were used. A sample of roughly 1,000 mothers was selected from 20 communities; about 800 of these were visited monthly for interviews about various aspects of the program. A comparison group was used for controlling the evaluation effect. Other sources were anthropometric surveys, followup and observations to verify self-reported behavior, com-

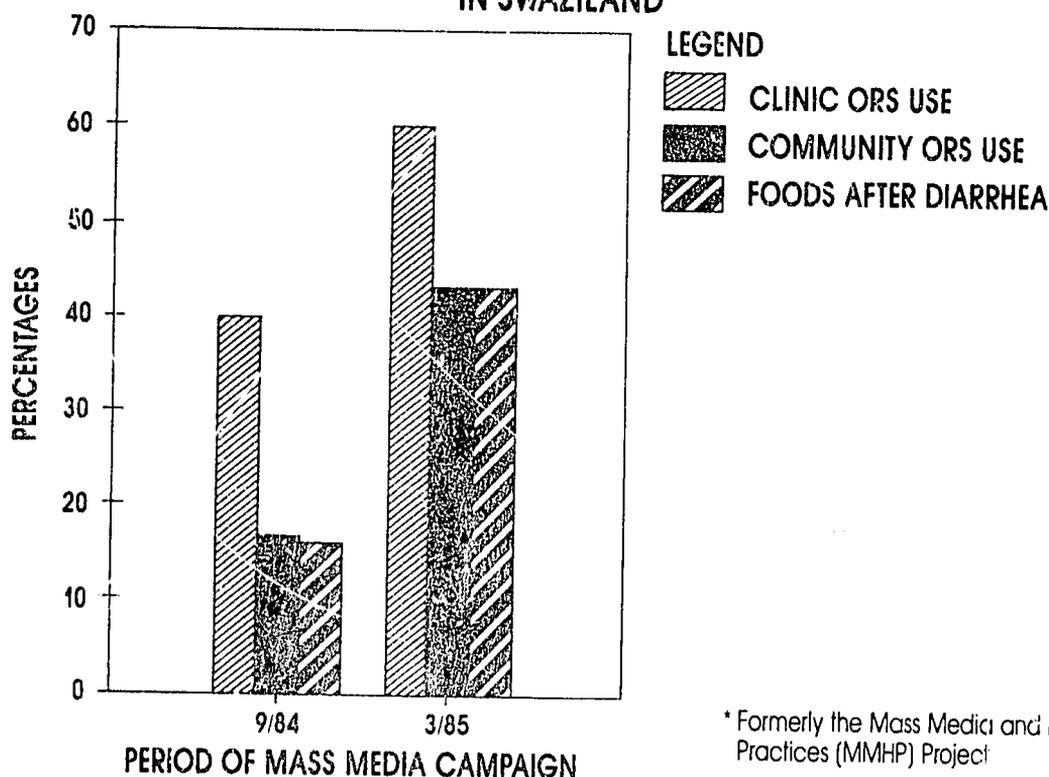
## COMBINATION OF TECHNIQUES

A combination of evaluation approaches and data collection techniques was found necessary to compare and verify results and measure the range of impacts resulting from ORT activities.

- **Egypt.** Sources of data included the regular vital event registration system, special studies, clinical records at



## IMPACT OF AID HEALTHCOM\* PROJECT IN SWAZILAND



munity mortality statistics, and health professional interviews.

- **Swaziland.** Data from a before-and-after survey of a representative sample of 450 mothers and from a clinic-based study of 10,500 children were used to evaluate the impact of a seven-month communication campaign.
- **Honduras.** The largest body of data was collected through a panel that measured a number of variables every four months: anthropometric measurements of growth, exposure to and learning from the mass media campaign, feeding practices, morbidity, and treatment responses. Pre- and post-surveys also covered economic and demographic variables. Other sources were special mortality studies, ethnography, interviews with health care workers, and cost-

effectiveness studies. Timing was scheduled according to message phases and diarrhea seasons.

- **Haiti.** Special field surveys were conducted through a market research firm and public sector health service statistics. Anthropological investigations were also used. A nationally representative sample survey for family planning included questions on ORT knowledge and use.

## MORTALITY ESTIMATES

In the absence of national sample surveys of mortality, other, less expensive methods were used to estimate mortality.

- **Egypt.** The project did not do a nationwide survey of diarrhea mortality and morbidity prior to the national

campaign phase because of the need for data that would influence decisions that had to be made immediately, such as packet size and media message design. Implementers developed two methods other than a nationwide survey for estimating impact on mortality. The first was a survey of 175 clusters in eight governorates with 10,740 children under two years of age. Children who died during a six-month period spanning the two peak seasons for diarrhea were identified. A determination was made whether diarrhea had been present the week before death. The second method, "numerator analysis," used annual death registration statistics from eleven governorates for the years 1980 and 1984 and then disaggregated them by age (0-to-1 and 1-to-4) and by trimester to catch peak diarrhea trimesters.

- **Honduras and The Gambia.** An indirect measure of impact was used because attempts to collect direct field data on deaths met with resistance from the local population. Presumed deaths averted were estimated from data on use and morbidity, making assumptions about the case-fatality rate and efficacy of ORT. Limited data on diarrhea-associated deaths were also available from death registrations in selected counties in Honduras. Despite problems with these data, they tend to support the findings on presumed deaths averted.

## OUTSIDE EVALUATORS

Use of organizations external to the implementing agencies as evaluators has been found useful to prevent personnel overload and disruption in implementation. In addition, this increases objectivity and provides specialized expertise in evaluation.

- **HEALTHCOM.** The Gambia and Honduras projects were evaluated

through a contract with Stanford University, which employed a separate staff and information systems to undertake impact evaluation. One of the drawbacks of the evaluation model was the length of time before implementers had access to results so that program improvements could be made. The Swaziland, Ecuador, and Peru evaluations are being conducted by the Annenberg School of Communications, University of Pennsylvania. Lag time has been considerably reduced and results are fed back to operational staff quickly.

- **Haiti.** A private market research firm, anthropologists who are not involved in implementation, and a family planning survey team (Columbia University) are external entities used for program evaluation studies.
- **Egypt.** Universities and private sector organizations have conducted the bulk of evaluation work. WHO and UNICEF have also done independent evaluations of the project.

## TOTAL COST ESTIMATES

Estimation of costs needed to include not only budget line items but also technical assistance and pro-rata shares of personnel, vehicles, media time and space, and equipment borrowed from facilities. The cost of planning needed to be added to the cost of implementation.

- **The Honduras and Gambia.** In addition to AID assistance, contributions of Ministries of Health, WHO, and UNICEF were added to the cost-effectiveness calculation. The value of MOH health facilities used, time of MOH workers who provided treatment, MOH overhead, and administrative costs were included. In The Gambia, an average of 5.3 hours per week of time on the national radio station, in segments ranging from 3 to 30 minutes, was also donated to the project.

## COST BREAKDOWNS

Research, methodology development, and personnel accounted for the bulk of the costs. Media accounted for only 15 percent of total cost.

- **Honduras.** Costs averaged \$346,603 per year for this three-year project (1980-82). The development costs of using mass media, including formative research for creating and testing messages, were allocated over the

limited duration of the project. Personnel accounted for 48 percent of total project costs.

- **The Gambia.** Lessons learned and the methodology developed in Honduras were utilized in The Gambia, reducing average annual costs to \$203,544 for this three-year project (1981-83). Personnel accounted for 45 percent of the costs. Since no ORS packets were used, the cost of supplies was lower (1 percent compared to 9 percent for Honduras).

## VI. INTEGRATING ORT WITH OTHER HEALTH ACTIVITIES

ORT programs worked to varying degrees with the overall primary health care system of the country. Most attempted to involve the host government in a major way to ensure that ORT program activities and ben-

efits were sustained beyond the life of the project. Many were also concerned with adding other supportive health activities as soon as possible without overburdening the delivery system.



A mother feeds her child recovering from an episode of diarrhea. Proper nutrition is an important part of ORT. photo by T. Kelly.

## LAYING A FOUNDATION

Once relatively high levels of ORT awareness, knowledge, and skills among the lay public and health community were achieved, personnel and funds devoted to ORT alone could often be redirected to other health interventions.

- **Haiti.** As a result of the campaign, knowledge of ORT has increased from 5 percent to almost 50 percent. In urban areas, 70 percent of children's caretakers had used ORS; 98 percent had learned to use it correctly; and 90 percent said they will use it in the future. The MOH is now planning for an immunization campaign, with family planning and nutrition to follow.
- **Honduras.** In rural areas, 95 percent of women had learned to mix ORT correctly at home; ORS use rates of 45 percent were achieved. The MOH used the newly learned social marketing approach and strengthened delivery system soon after the conclusion of the ORT project for expanding immunization, malaria control, and tuberculosis control activities. Immunization coverage for three doses of DPT and polio increased from about 50 percent to 78 percent; malaria spraying teams report greater public support for their activities.
- **The Gambia.** At the conclusion of the project, 64 percent of women knew the sugar-salt solution formula correctly. Of mothers who treated diarrhea at home, the percentage increase in giving sugar-salt solution went from 21 percent to 89 percent. After the conclusion of the project, the MOH continues to distribute Lottery Flyers to mothers. Selected radio programs have been rebroadcast and several new programs created. The government is now interested in applying the same methodology to programs in nutrition and family planning.

- **Ecuador.** A new program with nationwide coverage is planned that will include successful elements of the regional ORT campaign and add breastfeeding, growth monitoring, and immunization.
- **Sudan.** The Community-Based Family Health Project chose ORT as the first in a series of interventions in their target area. The selection of ORT was based on its acceptance in the communities and relative ease of implementation. Immunization and family planning services are scheduled to follow as communities' confidence increases in the project's activities.

## BREASTFEEDING

In countries where bottlefeeding was found to be a major causal factor in diarrheal disease and mortality, breastfeeding promotion activities were integrated with ORT at the outset. Others are incorporating breastfeeding promotion after the initial accomplishment of high ORT knowledge and use.

- **Haiti.** Studies, including those among low income urban populations (Cit  Simone), showed that risk of mortality was several times greater among infants bottlefed during the early months of life. The national diarrheal disease program includes a strong emphasis on breastfeeding support activities.
- **Costa Rica.** Professional workers were able to bring about a dramatic reduction in neonatal diarrheal morbidity and mortality primarily through the feeding of colostrum to neonates and early establishment of successful lactation. A series of hospital policies and practices initiated during 1977-79 led to a higher incidence and longer duration of breastfeeding.
- **Djibouti.** The PRITECH ORT project design team found evidence that bottlefeeding was an etiological factor in infant diarrheal morbidity and

mortality in urban and rural areas. More than 80 percent of infants are not breastfed beyond six months. At least 20 percent are breastfed for less than three months. In Djibouti, where an estimated 65 percent of births occur in medical institutions, the practice of bottlefeeding is encouraged by hospital policies and practices such as separating mothers and infants at birth and giving glucose solutions after birth. There were few provisions for breastfeeding cases in pediatric wards. Active promotion of formula through widespread distribution of samples is permitted in many dispensaries, MCH clinics, and maternities. Health education at dispensaries focuses heavily on correct preparation of bottlefeeds and use of formulas. The new program includes a number of activities by which social marketing principles will be applied to ORT as well as breastfeeding promotion.

- **Thailand.** Similar to an ORT strategy, the program to promote breastfeeding has been initiated through the leading hospitals in Bangkok, where hospital policies and practices regarding rooming-in, disallowance of routine administration of bottles, and little or no separation of mothers and infants after birth are being instituted. Through the assistance of a private sector marketing firm, promotional activities and materials are produced to help reinstate breastfeeding as the social norm among young mothers. Sensitization through conferences and seminars, and research activities to demonstrate the nature and magnitude of the bottlefeeding problem, helped set the stage for a wide-based program.
- **Egypt.** Breastfeeding promotion is a key activity of the national diarrhea control program. Research demonstrated that health professionals were commonly discouraging breastfeeding during diarrhea.

- **Honduras.** The HEALTHCOM project conducted a mini-campaign on breastfeeding during the ORT project and demonstrated impact on knowledge as well as practices. Through the PROALMA project, changes in hospital and clinic practices and policies are being brought about by inservice training, information dissemination through a clearinghouse and conferences, and the work of a mothers support group in motivating women.

## WATER AND SANITATION/NUTRITION

Water supply and sanitation and nutrition activities are being used to enhance the effects of diarrheal disease control through ORT.

- **Thailand.** Due to improved treatment practices and improved nutrition, mortality rates from diarrheal diseases decreased from 120 per 100,000 in 1977 to 52 in 1982. An estimated 30 percent of all deaths in children under 5 years of age is due to a combination of diarrhea and malnutrition. The present national strategy focuses on the following elements:
  - continued promotion and availability of ORT,
  - improved sanitation and safe drinking water,
  - direct nutrition intervention based on growth monitoring,
  - surveillance and control of cholera outbreaks.

## EXISTING SYSTEMS

Where extensive delivery systems existed prior to the launching of an ORT initiative, ORT activities were added to other programs.

- **Bolivia.** An extensive network of mothers clubs assisted by Caritas is planning the addition of ORT activi-

ties to food distribution and community development projects. This new PRITECH-assisted program will be supported by mass media promotion of ORT using radio and supplies of locally manufactured ORS packets.

- **Indonesia.** Community-based contraceptive distribution programs had been successfully established nationwide. Through transfer of responsibilities to community organizations, fieldworkers were able to add monthly growth monitoring and ORT activities.
- **Morocco.** This integrated family health program using an extensive network of outreach workers covers about 40 percent of the national population. In addition to expanding the availability of contraceptives, it now includes growth monitoring, weaning food distribution, and ORT.
- **Djibouti.** The CRS nutrition program has been distributing food supplements through MOH-MCH centers. ORT activities are to be added to this delivery system through inservice training, ORT supplies, sensitization of physicians, and mass media support.
- **Sudan.** Through retraining of midwives and provision of ORS packets, ORT activities have been strengthened in this community-based family health program.

## INSTITUTIONALIZATION

In the long term, integration or institutionalization of new methodologies and systems for strengthening overall PHC delivery appeared to be more assured and predictable when the ORT initiative was located in an institution identified as the main PHC delivery channel for the country.

- **HEALTHCOM.** Honduras, The Gambia, Ecuador, Peru, and Swaziland

campaigns were conducted by the MOH with involvement of health education, epidemiology, and MCH divisions. Skills in new methods of message development, pretesting, training, planning, scheduling, evaluation, and how to utilize private sector resources were transferred. Thus, subsequent PHC programs in immunization, sanitation, nutrition, malaria control, and tuberculosis control could be run more effectively.

- **Egypt.** A new quasi-autonomous secretariat had to be established with strong linkages to MOH, but outside its formal organizational framework. This was done so that the project could move quickly and have flexibility in areas such as procurement, hiring personnel, and linkages with the private sector. The seriousness of the diarrheal disease problem, coupled with the potentially constraining operational systems prevalent in 1982, dictated the setting up of an infrastructure that is not fully integrated into the traditional MOH system. While this approach has allowed dramatic reductions in mortality to be achieved within a span of two years, there have been tradeoffs in terms of uncertainty, ambiguity, and concerns that institutionalization may not fully occur. The project has had to use a system of grants and contracts with university laboratories, private research organizations, and advertising agencies to obtain their services because the project did not have direct control over the vast public sector network of personnel. New laws and regulations regarding customs duties, salary ceilings, and fringe benefits had to be devised because the project was neither a government entity nor a business.

# CONCLUSION

Oral rehydration therapy (ORT) has been called “potentially the most important medical advance this century.” Over the past years, this breakthrough has gained significant attention from policy makers, professional health workers, and the general public. Much has been said about the impact that ORT could have in the world—up to 4 million lives could be saved each year. This is indeed a great hope. But these lives will not be saved unless ORT is properly used and made widely available.

Critical implementation issues are standing in the way of many programs. They are found in various areas, such as

- communications and social marketing
- distribution and logistics
- health personnel training

- supervision and monitoring
- evaluation and cost issues
- integrating ORT with other health activities.

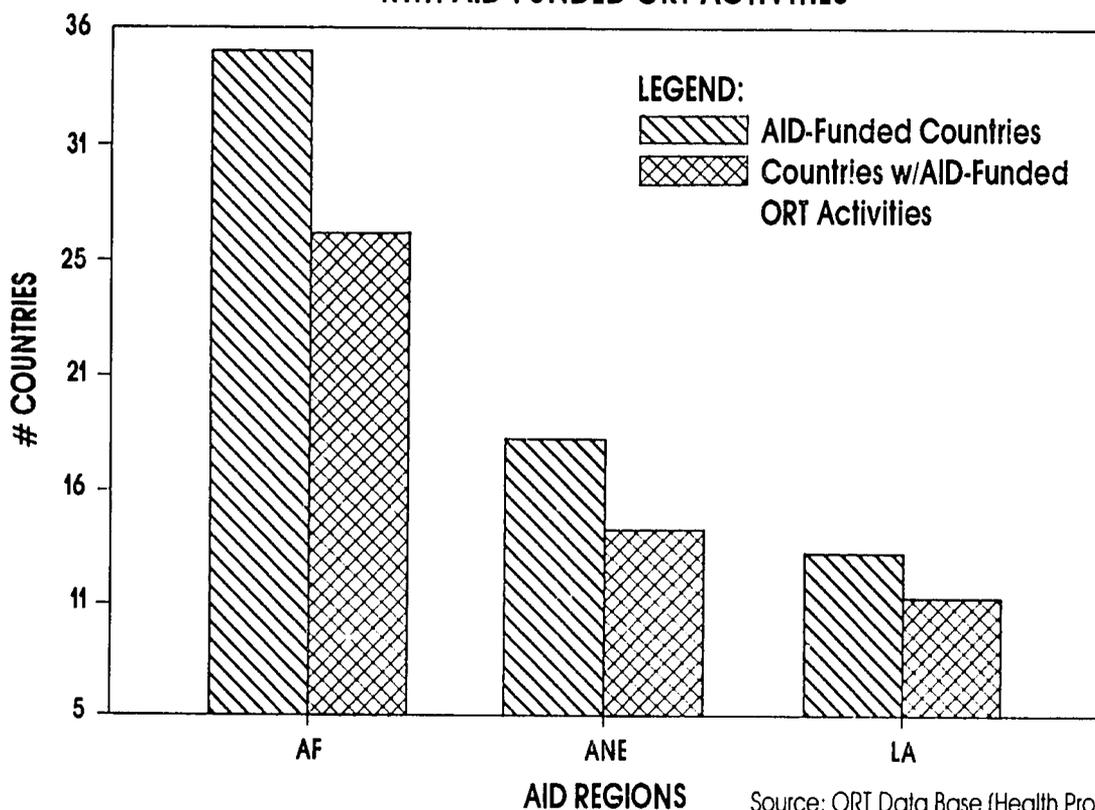
These are not new areas or new issues. Many development programs have faced them before. But now, through recent ORT activities, we have learned valuable lessons on ways to overcome these implementation problems.

This report identifies experiences gained by selected AID-assisted projects or studies over the last 15 years. It is AID’s hope that these field notes will facilitate exchange of information and encourage thoughtful review of lessons learned in this important area, thus contributing to the overall effort to improve the survival of the world’s children.

# APPENDIX

## ONGOING AID-FUNDED PROJECTS WITH ORT ACTIVITIES\*

### AID-FUNDED COUNTRIES AND COUNTRIES WITH AID-FUNDED ORT ACTIVITIES



Source: ORT Data Base (Health Projects DB)  
Date: 10/31/85

\*Material gathered from Health Projects Database, Office of Health, Bureau for Science and Technology, Agency for International Development.

# AFRICA

## BOTSWANA

TITLE: Grant to UNDP  
COST: \$344,000  
BEGUN: FY 85

Improvement of the Government of Botswana's prenatal services through technical assistance is the purpose of this project. It is focused on activities that have a direct bearing on the reduction of the major causes of maternal, infant, and child mortality in this country.

## BURUNDI

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$700,000  
BEGUN: FY 85

Technical assistance is provided to support the continuation and strengthening of ongoing national and international efforts to improve child health in Burundi. One of the major focuses of the project is on the control of diarrheal diseases (CDD).

## CENTRAL AFRICAN REPUBLIC

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$581,000  
BEGUN: FY 84

In this project to combat childhood communicable diseases, mid-level training courses on CDD are being conducted in collaboration with UNICEF.

## CHAD

TITLE: Oral Rehydration Therapy  
COST: \$160,000  
BEGUN: FY 84

Through this three-year project, technical assistance is provided to assist the Ministry of Health in its program to combat diarrheal diseases. Activities include health education and training in ORT.

## CONGO

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$667,000  
BEGUN: FY 84

A rural knowledge, attitudes, and practices (KAP) survey has been completed under this project, and a protocol for testing the accuracy of sugar salt solution mix has been written.

## DJIBOUTI

TITLE: Grant to UNICEF  
COST: \$700,000  
BEGUN: FY 85

A grant to UNICEF supports ORT, immunization, and growth monitoring activities through indigenous private voluntary organizations through this program.

## GUINEA

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$890,000  
BEGUN: FY 85

Technical assistance is provided for the continuation and strengthening of national and international efforts to improve child health in Guinea. One of the major focuses of the project is on CDD.

## IVORY COAST

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$1,400,000  
BEGUN: FY 85

Technical assistance is provided for the continuation and strengthening of national and international efforts to improve child health in the Ivory Coast. One of the major focuses of the project is on CDD.

## KENYA

TITLE: Health Planning and Information  
COST: \$2,450,000  
BEGUN: FY 79

Activities under this project include a program to control diarrheal disease mortality in preschool children in the Kakamega district of Kenya. A comparative study of two programs of oral rehydration solution (ORS) delivery and health education is being implemented as a component of this project. The objective is to test alternative means of ORS delivery for increasing utilization of ORT by families in the rural areas.

TITLE: Child Survival Initiative: Home League Project (SAWSO)  
COST: \$149,000  
BEGUN: FY 85

This project trains low-income women to use the GOBI (growth monitoring, oral rehydration therapy, breastfeeding, and immunization) techniques of child survival. Implementation activities in ORT include training 3,300 Home League women and 13,000 women from the community to reduce mortality due to diarrheal dehydration by 25 percent. An important part of this strategy is to increase the effective utilization of existing health services by community members.

## LESOTHO

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$578,000  
BEGUN: FY 85

Comprehensive training in ORT is being conducted in all 19 health service areas (HSA's) as part of the CDD component of this project. CDD activities also include a health information system, health education, and operations research in ORT.

## LIBERIA

TITLE: Planning and Evaluating Financing Schemes (PRICOR)  
COST: \$44,055  
BEGUN: FY 84

The objective of this study is to determine how the community itself can finance all or part of the cost of PHC services in order to ensure that these essential services can be sustained. The topics included under ORT are (1) promoting the use of ORT in health facilities; (2) promoting the use of ORT in the homes; (3) improving the availability of supplies; and (4) delivery systems.

TITLE: Testing the Effectiveness of Adolescent School Children as Health Promoters in Rural Liberia (PRICOR)  
COST: \$149,035  
BEGUN: FY 84

The project purpose is to test the efficiency of preparing adolescents to function within their own households and communities as health promoters of ORT and other simple health interventions.

TITLE: ORT Treatment in Liberia (PRICOR)  
COST: \$63,087  
BEGUN: FY 84

Objectives of this study are to identify the most effective ways (1) to persuade mothers to use ORT; (2) to prevent dehydration and death due to dehydration; and (3) to ensure availability of supplies (homemade and/or packets) in the most cost-effective manner.

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$830,000  
BEGUN: FY 83

The CCCD Technical Committee of Liberia, which has members from every division of the Ministry of Health and Social Welfare, addresses critical issues concerning primary health care development through this project. The ORT component is concentrated on inservice training courses for Peace Corps volunteers and their counterparts.

TITLE: Primary Health Care  
COST: \$15,000,000  
BEGUN: FY 83

The purpose of this project is to increase the proportion of target population with access to primary health care services. Village health workers are being trained in ORT so that by the end of the project, 60 percent of mothers of children under 3 years old will understand how to prepare homemade ORS.

## MALAWI

TITLE: Health Institutions Development  
COST: \$3,280,000  
BEGUN: FY 84

ORT is integrated in the inservice training curriculum for primary health care and family planning for all levels of health personnel. Mass media campaigns to promote ORT are being carried out together with the AID-funded Mass Media and Health Practices Project in Malawi.

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$1,423,000  
BEGUN: FY 84

As part of the CDD program of the CCCD project, training of Peace Corps nurses has been initiated in Malawi. ORT services are being provided through Oral Rehydration Units (ORU) set up in district hospitals in the southern region of the country. Most districts distribute ORS free of charge, while encouraging the use of sugar and salt solution in the home.

TITLE: ORT/EPI Promotion (ADRA)  
COST: \$308,000  
BEGUN: FY 85  
The purpose of this project is to reduce premature deaths among young children 0-to-5 years old. Activities include a six-week training course in ORT and immunization.

TITLE: Lower Shire Valley Interventions (IEF)  
COST: \$442,000  
BEGUN: FY 85  
This project focuses on preventive and therapeutic eye health care services for children under six years old and women. The overall program strategy, however, includes teaching mothers and traditional birth attendants about ORT, preparation of oral rehydration salts, and its use.

## **MAI**

TITLE: Rural Health Services Development  
COST: \$3,690,000  
BEGUN: FY 77  
The curriculum for training health workers in the delivery of health services at village, sub-district, district, and regional levels includes ORT. Technical assistance and logistics support are provided to assist the Government of Mali's effort in improving the delivery of village-level health services.

TITLE: Oral Rehydration Therapy  
COST: \$300,000  
BEGUN: FY 85  
Technical assistance is provided to the Ministry of Health for its control of diarrheal diseases program. Activities include training community health workers in ORT and a mass media and communications campaign to promote ORT.

## **MAURITANIA**

TITLE: Rural Health Services  
COST: \$5,000,000  
BEGUN: FY 83  
Assistance is provided to the Government of Mauritania in developing primary health care service delivery programs including ORT and other interventions, at the national level and in three regions.

## **NIGER**

TITLE: Improving Rural Health  
COST: \$14,029,000  
BEGUN: FY 78

This program focuses on establishing a viable rural health delivery system by concentrating on two essential areas of health programming: human resource development and institutional support. ORT is incorporated in health education and in the training of multilevel health workers for primary health care services.

TITLE: Oral Rehydration Therapy  
COST: \$320,000  
BEGUN: FY 84

Technical assistance is provided to the Ministry of Health for its diarrheal diseases control program. Activities include training and health education in ORT and a mass media campaign for the promotion of ORT.

## **NIGERIA**

TITLE: Grant to UNICEF  
COST: \$900,000  
BEGUN: FY 85

A grant to UNICEF supports activities in ORT and immunization through indigenous private voluntary organizations.

## **RWANDA**

TITLE: ORT/EPI Promotion (ADRA)  
COST: \$270,000  
BEGUN: FY 85

This project trains health workers to provide ORT and immunization services. Whenever feasible, the community-oriented strategy is complemented by activities to promote breastfeeding, child-spacing, hygiene, and sanitation.

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$1,072,000  
BEGUN: FY 78

Training in the use of ORT has been conducted for mid-level managers as part of the control of diarrheal diseases component of the CCCD project in Rwanda.

## SENEGAL

TITLE: Rural Health Delivery II

COST: \$9,225,000

BEGUN: FY 84

Technical assistance, long-term training for senior health workers, operations research, and provision of materials for a mass media program make up the ORT component of this project. It extends primary health care services to rural and nomadic populations.

## SIERRA LEONE

TITLE: Grant to UNDP

COST: \$655,000

BEGUN: FY 85

A grant to UNDP includes plans for two ORT demonstration and training centers to enhance awareness, commitment, and skills of health professionals and field workers in ORT.

TITLE: Alternative Approaches to Training Mothers in ORT (PRICOR)

COST: \$21,255

BEGUN: FY 84

This study attempts to identify the best ways to educate and train women through PHC programs to prepare and administer ORT.

## SOMALIA

TITLE: Grant to UNDP

COST: \$655,000

BEGUN: FY 85

Project activities in Somalia under a grant to UNDP include the establishment of an oral rehydration solution production facility with a target output level of 3 million packets by 1988.

## SUDAN

TITLE: Grant to UNICEF

COST: \$700,000

BEGUN: FY 85

Through indigenous private voluntary organizations, UNICEF aims at reducing infant and child mortality and morbidity in Sudan by focusing on various activities in ORT and immunization.

TITLE: Rural Health Support—OPG

COST: \$16,182,000

BEGUN: FY 80

Training health workers in ORT in northern Sudan, and in the pilot zones in the south, are among project activities to strengthen personnel and facility resources. Improving the capability of the Government of Sudan to provide primary health care is central to this effort.

## SWAZILAND

TITLE: Mass Media and Health Practices (MMHP)  
COST: \$150,000  
BEGUN: FY 84

Technical assistance for the promotion of ORT and other health interventions is provided through this project. The strategy for the promotional campaigns includes training health workers in the use of ORT and health education for the public using fliers, posters, and other media.

TITLE: Rural Water-borne Disease Control  
COST: \$3,297,000  
BEGUN: FY 79

ORT is a focus of the health education component of this initiative that includes a mass media campaign against diarrheal diseases. Preparation of an ORT Manual for the use of clinic and hospital staff is included in the project. In 1983, 200 traditional healers were trained in the use of oral rehydration solutions.

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$703,000  
BEGUN: FY 84

The control of diarrheal diseases component of this project is promoting the use of ORT through media campaigns implemented jointly with the Mass Media and Health Practices project.

TITLE: Appropriate Method for Sustaining Community Health Workers (PRICOR)  
COST: \$63,181  
BEGUN: FY 84

This study focuses on the problem of compensating the Rural Health Motivator (RHM), but includes some aspects of community organization and supervision as they relate to effective stabilization. The value of the RHMs to the community is being increased by additional training in growth monitoring, immunization monitoring, ORT, and prenatal monitoring.

## TOGO

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$1,140,000  
BEGUN: FY 83

Training, which integrates health education skills with other CCCD interventions, especially ORT and immunization, is conducted in a joint effort supported by the Ministry of Health, the International Children's Center (CIE), and the CCCD project. All prefectures are supplied with oral rehydration solutions. ORS is also available to more than two-thirds of the target population, or more than 800,000 children under five years of age.

## UGANDA

TITLE: Oral Rehydration Therapy  
COST: \$1,210,000  
BEGUN: FY 84

AID combines its efforts with UNICEF and the Government of Uganda in working towards the control of diarrheal diseases through: (1) procurement of oral rehydration salts; (2) a feasibility study on the most effective sources of ORS; (3) selected operational research studies; (4) external evaluation; and (5) in-country training activities. These activities are undertaken as part of the GOU's National Program for the Control of Diarrheal Diseases.

TITLE: Community Health Services (CARE)  
COST: \$512,000  
BEGUN: FY 85

Reducing infant and child mortality and morbidity as well as general improvement of the health status of mothers and preschool children in the Jinja, Iganga, and Kamuli districts are long-term objectives of this project. Its activities include the establishment of a community health worker network to provide services in ORT and immunization to mothers and children in selected districts.

## ZAIRE

TITLE: Area Nutrition Improvement  
COST: \$4,300,000  
BEGUN: FY 82

This program is aimed at strengthening the capability of the National Human Nutrition Planning Center (CEPLANUT) program to reduce by 10 percent the level of acute malnutrition in children under 5 years old. The target population is in the Badundu region. ORT activities are included in the health education and training components of the project.

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$4,850,000  
BEGUN: FY 82

Technical assistance for national control of diarrheal diseases is provided through this project. Activities in CDD have included setting up a national ORT training center in the Mama Yemo Hospital where rural health workers, volunteers, and other health personnel receive training in ORT. A computerized system for analyzing vaccination data and utilization of ORS is in use; an information pamphlet on ORT and a manual on "How to Set Up an ORT Center" have been published.

TITLE: Basic Rural Health—OPG  
COST: \$4,864,000  
BEGUN: FY 81

In this project, a self-sustaining community-supported system of primary health care is offered for the prevention and treatment of the 10 most prevalent health problems in 50 zones in Zaire. Activities in ORT include technical assistance, training, and health education.

## ZAMBIA

TITLE: Grant to UNDP  
COST: \$648,000  
BEGUN: FY 85

The project supports activities in 15 districts affected by drought conditions involving: (1) drugs for the most vulnerable groups; (2) transportation; and (3) monitoring health implications of the drought.

## ZIMBABWE

TITLE: Grant to UNDP  
COST: \$260,000  
BEGUN: FY 85

Activity in this project involves the expansion of community-based activities successfully undertaken by Save the Children Federation (U.K.) to four new regions. This is being done through the establishment of four training centers.

TITLE: Protecting Life and Health of Children (SCF)  
COST: \$964,000  
BEGUN: FY 85

A motivation program covering child protective behaviors is being carried out in this project to expand ongoing child survival activities. The behaviors being focused on include ORT. In addition, training in ORT and health education will also be accomplished.

TITLE: Primary Health Care (WVRO)  
COST: \$690,000  
BEGUN: FY 85

In addition to focusing on maximizing immunization coverage, the project also includes increasing parental knowledge and use of ORT. Plans include household registration through which diarrhea-related mortality will be recorded.

## REGIONAL

TITLE: Grant to UNDP  
COST: \$3,500,000  
BEGUN: FY 85

A grant to UNDP to support programs to reduce infant and child mortality and morbidity in Africa was made from the Child Survival Fund. Interventions in ORT will be carried out in Botswana, Sierra Leone, and Somalia. The activities include establishment of ORT demonstration and training centers to enhance awareness, commitment, and skills of health professionals and field workers in Sierra Leone. In Somalia, an ORS production facility will be established with a target output of 3 million packets by 1988.

TITLE: Combatting Childhood Communicable Diseases (CCCD)  
COST: \$45,000,000  
BEGUN: FY 78

This is a multi-donor project to combat childhood communicable diseases in sub-Saharan Africa. The project consists of a regional effort to assist country personnel involved in Expanded Program of Immunization (EPI) and Control of Diarrheal Diseases (CDD) programs as well as country-specific efforts. Activities in CDD include: (1) regional and incountry seminars to senior and mid-level health managers; (2) training to health workers in ORT at the service delivery level; (3) technical assistance and training at all levels of the health delivery system to develop appropriate management information systems; (4) short-term epidemiological assistance to help host countries develop/revise national CDD plans; (5) health education and motivation of country officials and beneficiaries (especially mothers) to implement/use CDD services; and (6) support studies on operational and management problems in CDD.

## SAHEL REGIONAL

TITLE: Oral Rehydration Therapy (CCCD/PRITECH)  
COST: \$4,046,000  
BEGUN: FY 84

Two projects implemented through the CCCD (\$1,527,000) and PRITECH (\$2,509,000) programs were initiated in FY 84 to promote ORT and health education. These projects provide technical assistance to Sahelian governments to treat diarrheal diseases, to reduce associated morbidity and mortality, and to improve nutritional status of infants and children. Through PRITECH, bi-lateral activities are being implemented in Chad, Mali, Niger, and Senegal.

# ASIA/NEAR EAST

## BANGLADESH

TITLE: ORT Social Marketing  
COST: \$5,000,000  
BEGUN: FY 85

Technical assistance and equipment for local production of oral rehydration salts is the focus of this project. Plans include establishment of ORS retail outlets, research and communications unit to conduct studies and to promote ORT in general, and other activities in diarrheal disease control. Promotion of locally produced ORS and home-mixes will be emphasized. One of the goals of the project is to market a "super" ORS when it is feasible.

TITLE: Jessore Rural Health Care (SAWSO)  
COST: \$612,000  
BEGUN: FY 85

Strategies for this project have strong emphasis on ORT and immunization. Village health workers are being trained to teach parents how to administer ORT and how to use it to control diarrheal dehydration.

TITLE: Expanding Child Survival Activities (SCF)  
COST: \$276,000  
BEGUN: FY 85

In this project, SCF is expanding its health activities in Bangladesh to include ORT, immunization, growth monitoring, and nutrition counseling. The emphasis is on training multipurpose women workers (PDWs) to serve their own neighborhoods as resident home visitors. The PDWs are assisted by male health aides, not only to relieve work load, but also to bring fathers into the educational outreach program.

TITLE: Grant to UNICEF  
COST: \$500,000  
BEGUN: FY 85

A grant to UNICEF supports diarrheal disease control and nutrition activities through the International Red Cross for its Child Alive program in Bangladesh.

## BURMA

TITLE: Primary Health Care II  
COST: \$7,140,000  
BEGUN: FY 83

Village volunteer health services are being expanded to reduce diarrheal diseases, malnutrition, inadequate maternity care, and lack of family health counseling services. Modified curricula and methods for pre- and inservice training emphasize preventive functions and include ORT. Family counseling services deal with problems of mothers and children.

## EGYPT

TITLE: Strengthening Rural Health Delivery System  
COST: \$14,900,000  
P GUN: FY 76

Health education and family planning are emphasized in this effort to strengthen delivery of rural health services. Activities focus on improving maternal and child health services, which include an applied research program to control diarrhea. The research has shown that oral rehydration can be accomplished successfully in the home by mothers.

TITLE: Urban Low Cost Health Delivery  
COST: \$45,553,000  
BEGUN: FY 79

The existing urban health care system is made more accessible and effective through three major components of this project: technical interventions, renovation efforts, and new construction. ORT is included among the technical interventions in primary health care. It is integrated in the training programs for health personnel.

TITLE: Control of Diarrheal Diseases  
COST: \$26,000,000  
BEGUN: FY 81

In this nationwide diarrheal disease rehydration campaign, activities are grouped into three major areas: (1) training of practitioners in the appropriate therapy for treating diarrhea with emphasis given to oral rehydration; (2) improvement of mothers' knowledge, attitudes, and practices in caring for children with diarrhea; and (3) production and distribution of oral rehydration salts in sufficient quantities for countrywide distribution. Services are made readily and widely available in this project to reduce child mortality from dehydration due to diarrhea.

TITLE: Operational Analysis of Nutritional Repletion of the Child after Diarrhea (PRICOR)  
COST: \$46,427  
BEGUN: FY 85

This study is developing one or more effective ways of bringing educational messages to mothers encouraging them to feed their children during and after diarrhea.

TITLE: Improving Distribution of ORS in the Rural Community (PRICOR)  
COST: \$94,925  
BEGUN: FY 84

The objective of this study is to investigate and analyze the present operational situation to identify weak points of the ORS distribution system, suggest alternative solutions, and test one of the suggested solutions in the field.

## INDIA

TITLE: Integrated Rural Health and Population II  
COST: \$26,000,000  
BEGUN: FY 80

The purpose of this project is to improve access to primary health care and population services through better facilities and trained health personnel. Health workers are being trained in ORT. Government of India's model health plan is given support in 13 districts of 5 states.

TITLE: Grant to UNICEF  
COST: \$2,500,000  
BEGUN: FY 85

A grant to UNICEF supports indigenous private voluntary organizations and the International Red Cross in their immunization, diarrhea management, growth monitoring, and nutrition education activities.

TITLE: Integrated Child Development Services  
COST: \$12,800,000  
BEGUN: FY 83

Through this project the Government of India's integrated child development services are being expanded and improved. Activities involve the most at-risk pregnant women and severely malnourished children 0-to 36 months of age. Trainer and auxiliary health worker training includes ORT.

TITLE: India Technical Collaboration  
COST: \$1,500,000  
BEGUN: FY 85

The United States and the Government of India plan to work collaboratively to strengthen essential components of health services targetted toward child survival goals—ORT, immunization, growth monitoring, breastfeeding, and child spacing. Activities include testing of vaccines, training of medical and para-medical personnel, distribution of selected publications in support of child survival, and management of conferences, seminars, and workshops on child survival services.

## INDONESIA

TITLE: Grant to UNICEF  
COST: \$1,200,000  
BEGUN: FY 83

In Indonesia, a grant to UNICEF supports activities in ORT and immunization, aimed at reducing infant and child mortality.

TITLE: Health and Child Survival (SCF)  
COST: \$237,000  
BEGUN: FY 85  
The project aims at promoting health and survival of children and mothers through family training in behaviors that have an important impact on health and survival. Self-reliance is encouraged through a variety of measures that involve, among other things, training families in the preparation of oral rehydration solutions.

TITLE: Health Training Research and Development  
COST: \$10,900,000  
BEGUN: FY 78  
Assistance is being provided to the Ministry of Health in planning, research and development (R&D), and health education. The planning sector focuses on training of trainers. The R&D unit supports research conducted by universities. The emphasis on ORT involves: (1) epidemiologic and other studies; (2) upgrading surveillance systems; (3) evaluation of existing ORT and other relevant programs in diarrheal diseases; (4) feasibility studies on alternatives to ORT; and (5) development of training methods and materials for program personnel and beneficiaries.

TITLE: Child Survival (CARE)  
COST: \$331,000  
BEGUN: FY 85  
Immunization, nutrition, and ORT are the primary interventions in this project. Using methods and techniques already tested in selected villages in West Java, clinic staff and community health workers are being trained in ORT, maternal health, family planning, immunization, nutrition, and growth monitoring.

TITLE: Village FP Mother-Child Welfare  
COST: \$13,000,000  
BEGUN: FY 80  
This project supports the national family planning (FP) program objective of small healthy families and increased FP acceptance by establishing a village-based system, linked to the village FP program including food and nutrition surveillance, education, and services that will reduce malnutrition and diarrheal diseases among children under five.

TITLE: Integrated Primary Health Care (CRS)  
COST: \$500,000  
BEGUN: FY 85  
Under this project a clinic is being established in each village of the provinces of Southeast Sulawesi and Riau. The clinics will be equipped, outfitted, and programmed to provide services on growth monitoring and education of mothers in ORT and nutrition.

TITLE: Comprehensive Health Improvement Program  
COST: \$9,000,000  
BEGUN: FY 81

The focus of this project is upgrading health delivery services in the outer island provinces of D.I. Aceh, Sumatra Barat, and Nusa Tenggara Timur. The project addresses manpower requirement and assistance in designing and implementing needed health services. With the help of technical assistance, health personnel in each province are conducting epidemiological surveys that include diarrheal diseases.

## JORDAN

TITLE: Health Management and Services Development  
COST: \$2,875,000  
BEGUN: FY 77

ORT is integrated in the revised curriculum for retraining primary health care workers in this effort to improve basic health services. Developing and strengthening a health planning unit within the Ministry of Health is a goal of this project.

TITLE: Health Education  
COST: \$980,000  
BEGUN: FY 80

Health education campaigns combining community organization and mass media techniques, as well as informal techniques of individual communication, are the primary activities in this effort. It is aimed at affecting positive behavioral changes in public health attitudes and practices. ORT is included in the media messages.

## MOROCCO

TITLE: Family Planning Support III  
COST: \$5,260,000  
BEGUN: FY 84

Through this project, AID assists UNICEF's commodity support to the Government of Morocco ORT program by including ORS packet distribution among the activities of mobile health workers.

TITLE: Technology for Primary Health Care (PRITECH)  
COST: \$300,000  
BEGUN: FY 85

This project provides technical assistance to the Ministry of Health for the control of diarrheal diseases program. Activities include promotion of ORT through social marketing, mass media campaigns, and health education.

## NEPAL

TITLE: Integrated Rural Health/FP Services  
COST: \$18,000,000  
BEGUN: FY 80

This project focuses on new approaches to increase the use of oral rehydration therapy, expand immunization coverage for priority diseases, and field-test methods to identify and treat serious acute respiratory infections. An ORT training unit is being established at Nepal's only pediatric hospital in Kathmandu, where Ministry of Health staff will be trained. Similar ORT units are being established at regional and district levels. In addition, 20 small-scale research studies related to ORT and diarrheal diseases are underway.

## OMAN

TITLE: Technology for Primary Health Care (PRITECH)  
COST: \$80,000  
BEGUN: FY 85

ORT, immunization, and nutrition are the primary interventions in this project that is integrated in the Government of Oman's child survival program.

## PAKISTAN

TITLE: Primary Health Care  
COST: \$20,000,000  
BEGUN: FY 82

Support is being given to the Government of Pakistan's primary health care program in training, data collection, and introduction of new primary health care policies and procedures. Included among commodities procured through the project are chemicals for the production of oral rehydration salts.

TITLE: Technology for Primary Health Care (PRITECH)  
COST: \$120,000  
BEGUN: FY 85

The purpose of this project is to provide technical assistance to the Ministry of Health for the national control of diarrheal diseases program. Activities include health education in ORT, social marketing, and media campaigns for the promotion of ORT.

TITLE: Expansion of Primary Health Care Services (SAWSO)  
COST: \$626,000  
BEGUN: FY 85

The project focuses on plans to intensify ORT and immunization activities in the existing Salvation Army programs in Pakistan through the expansion of curative clinics in the outreach areas.

## PHILIPPINES

TITLE: Primary Health Care Financing  
COST: \$16,000,000  
BEGUN: FY 83

Efforts are being made to expand the accessibility and utilization of community managed and financed primary health care systems. The ORT component of the project involves expansion of private sector distribution and marketing of oral rehydration salts, improving the quality of home mixes, and concentrating efforts to increase use of ORS.

## THAILAND

TITLE: Rural Primary Health Care Expansion  
COST: \$7,500,000  
BEGUN: FY 78

Multilevel training in primary health care services, operational research, and evaluation studies make up the program to make PHC services more available, particularly to the rural poor in 20 target provinces. ORT is included in health education and training.

## TUNISIA

TITLE: Rural Community Health  
COST: \$7,629,000  
BEGUN: FY 78

Quality and coverage of health services in Silliana and Zid Bou Zid provinces are the concerns of this initiative. ORT is among the training activities for non-physician health workers. It is included in primary health care services.

## YEMEN

TITLE: Family Health Services  
COST: \$6,400,000  
BEGUN: FY 85

This new initiative will incorporate efforts directed at a number of family health problems, including: family planning, infertility management, infant nutrition, and diarrheal disease control. The latter is focused on ORT.

# LATIN AMERICA

## BOLIVIA

TITLE: Self-Financing Primary Health Care  
COST: \$1,100,000  
BEGUN: FY 83

This is a pilot project for a self-financing primary health care system to improve PHC services currently being provided in the Department of Santa Cruz. Training PHC workers and supervisors in service delivery and management, designing a financial management system, and establishing health service delivery outlets are the main activities of the project. The training curriculum includes ORT.

TITLE: Enhancing Child Health and Survival (SCF)  
COST: \$669,000  
BEGUN: FY 85

Four basic health interventions—ORT, immunization, growth monitoring, nutrition—are being provided in the community-based, family-oriented primary health care system established under this project. Families are being trained in the prevention and early treatment of diarrheal diseases with ORT.

TITLE: Rural Health Education (CARE)  
COST: \$625,000  
BEGUN: FY 85

Educational activities in this project are oriented towards diarrheal disease control and complement CARE Bolivia's ongoing efforts in potable water, agricultural credit, agroforestry, and income generation.

TITLE: Child Survival  
COST: \$600,000  
BEGUN: FY 85

Technical assistance is provided to CARITAS for promoting ORT and nutrition education. In ORT, activities include health education and training.

## BRAZIL

TITLE: Mobilization of Traditional Healers in PHC (PRICOR)  
COST: \$122,904  
BEGUN: FY 85

This study addresses the question of how best to mobilize and integrate traditional healers into the health system to clinically manage diarrheal illness and deliver ORT.

## **COSTA RICA**

TITLE: Health Services Support  
COST: \$10,250,000  
BEGUN: FY 85

Through this project, essential pharmaceuticals and medical supplies, including oral rehydration salts, are provided to the Costa Rican National Health Care System.

## **DOMINICAN REPUBLIC**

TITLE: Health Systems Management  
COST: \$1,200,000  
BEGUN: FY 84

Support is given to strengthen the management system of the Public Health and Social Security Secretariat (SESPAS) for administering health services. ORT is included in the health education component of the project.

TITLE: Health and Nutrition Education  
COST: \$5,487,000  
BEGUN: FY 75

ORT is integrated in this effort to establish a low-cost health delivery system to reduce infant/child mortality.

TITLE: Improving Distribution of ORS (PRICOR)  
COST: \$178,572  
BEGUN: FY 83

This study examines current pricing policies, possible subsidized distribution, and the demand for ORS in the Dominican Republic. From this information, a model is being designed which will promote an initial government supply of packets with a resupply through the private sector.

## **ECUADOR**

TITLE: Integrated Rural Health Delivery Systems  
COST: \$8,365,000  
BEGUN: FY 81

Efforts to develop and replicate a nationwide low-cost health delivery system include a promotional strategy for ORT. This is done through a health education/social marketing campaign in conjunction with the government's intensive program of national mobilization. Four million packets of ORS are also distributed annually, and 75 new oral rehydration units are provided with oral rehydration solution.

TITLE: Mass Media and Health Practices (MMHP)  
COST: \$500,000  
BEGUN: FY 83

This project provides technical assistance to the Ministry of Health to strengthen its health education programs through systematic application of mass communication. The messages included in the media campaigns focus on the prevention and treatment of acute infant diarrhea especially in isolated rural areas.

TITLE: Child Survival Program for Marginal Urban Areas (SCF)  
COST: \$724,000  
BEGUN: FY 85

Twenty of Quito's ninety "marginal communities," and an urban marginal area of Portoviejo are the impact areas of this project to promote health and survival of mothers and their children. ORT training is being given to parents and community health workers.

TITLE: Applied Nutrition Program through Women's Clubs (CRS)  
COST: \$314,000  
BEGUN: FY 85

Self-sustaining health and nutrition programs operated by Women's Clubs are being established in the process of implementing this pilot project. Its overall goal is to improve the nutrition and health standards of 3,000 infants and children ages 0-to-6. Activities in ORT include training mothers in the use of ORT and establishing a self-financing pharmacy to provide a ready supply of oral rehydration solutions and vital medicines.

## EL SALVADOR

TITLE: Health and Jobs for Displaced Persons  
COST: \$5,275,000  
BEGUN: FY 83

This project is directed toward providing jobs and health services to people displaced by the war. The health component includes regular delivery of food assistance, a supplementary feeding program, and ORT services to combat diarrhea in the displaced population who suffer high morbidity and mortality rates.

TITLE: Health Systems Vitalization  
COST: \$25,400,000  
BEGUN: FY 83

The goal of this project is to support the Ministry of Health's five year health plan to extend health services (including ORT) coverage in rural areas and lower health care costs through improved planning and management. AID provides critically needed pharmaceutical supplies, equipment, vehicles, and training in the delivery of emergency medical services. Assistance is provided to strengthen support systems such as supply management, procurement, malaria and drug quality control, maintenance, and management information, which are integral parts of preventive and curative health systems.

## **GRENADA**

TITLE: Community Participation in Reduction of Childhood Morbidity (PRICOR)  
COST: \$90,880  
BEGUN: FY 84

This study is embedded in a larger project aimed at reducing childhood morbidity and mortality due to interaction of diarrhea, malnutrition, and infectious diseases by means of health education and ORT. The objective of this study is to improve the cost-effectiveness of ORT through community participation.

## **GUATEMALA**

TITLE: Impact of Appropriate Technology on Mother and Child Health (HOPE)  
COST: \$700,000  
BEGUN: FY 85

The purpose of this project is to establish capability in selected Indian communities to increase access to the effective use of ORT for diarrheal diseases and access to other health services. Interventions in ORT include: (1) educating mothers through ORT demonstrations and discussions at the community level; (2) applying appropriate technology methodology in the preparation of ORT solutions using locally available materials; and (3) educating auxiliary nurses and rural health technicians in ORT.

## **HAITI**

TITLE: Rural Health Delivery Systems  
COST: \$17,500,000  
BEGUN: FY 79

This is a national program to make low-cost health services accessible to 70 percent of the rural population through training of health service personnel, construction or renovation of dispensaries in rural areas, and provision of medical equipment and supplies. ORT is integrated in the training component of this project.

TITLE: Child Survival in Jacmel (FPP)  
COST: \$474,000  
BEGUN: FY 85

Foster Parents Plan's well-established integrated community development program in Haiti is being expanded in this project to provide increased health services to young children and their mothers. Child survival interventions include immunization, control of diarrheal diseases, and nutrition education.

TITLE: Child Survival ORT/Immunization (ADRA)  
COST: \$310,000  
BEGUN: FY 85  
The beneficiaries of this project aimed at reducing infant and child mortality are 200,000 children aged 0-to-5 and their mothers. To reach this goal, ADRA is expanding its ongoing activities in the area to include more activities in oral rehydration therapy. Mobile health teams are being established to supply oral rehydration salts and provide immunization services to 48 existing ADRA clinics in the target area.

TITLE: Integrated Nutrition and Education Centers (CARE)  
COST: \$696,000  
BEGUN: FY 85  
Project focus on ORT is being implemented through resupplying oral rehydration salts to local health facilities and training mothers in the home preparation of ORS.

TITLE: Child Survival (ICC)  
COST: \$408,000  
BEGUN: FY 85  
To reduce child mortality by at least 20 percent within three years, a nationwide program of expanded immunization is being launched through this project. International Child Care's established health centers and mobile vaccinators are the focal point of this effort that will include educational and motivational activities to promote the use of ORT, improved nutrition, and child spacing.

TITLE: Child Survival Programs through Home Leagues (SAWSO)  
COST: \$143,000  
BEGUN: FY 85  
This project focuses on training Home League women and the women in the community in GOBI (growth monitoring, oral rehydration therapy, breastfeeding, and immunization) health services. Through effective use of ORT, the project aims at reducing infant mortality from diarrheal diseases by 25 percent.

TITLE: Alternative Methods of Compensating CHWs  
COST: \$68,162  
BEGUN: FY 84  
The objective of this study is to find the best method or mix of methods to motivate Community Health Workers (CHWs) in such a way that they are encouraged to perform tasks likely to have a positive impact on maternal and child health care.

TITLE: Integrating ORT into PHC through Community Organization Efforts (PRICOR)  
COST: \$63,360  
BEGUN: FY 85  
The objective of this study is to integrate promotion of ORT into the existing PHC program with emphasis on finding appropriate ways to promote community participation in the control of diarrhea among children under five, using ORT.

## HONDURAS

TITLE: Mass Media and Health Practices (MMHP)  
COST: \$1,930,000  
BEGUN: FY 79

This project provides technical assistance to strengthen the health education programs of the Ministry of Health through the systematic application of mass communication. Messages included in the mass media campaigns focus on the prevention and treatment of acute infant diarrhea in rural areas.

## PERU

TITLE: Integrated Primary Health and Family Planning  
COST: \$4,000,000  
BEGUN: FY 79

A twofold thrust of this project is aimed at strengthening primary health care services in urban areas and integration of family planning services into the public and private sector. Training activities include ORT, and are geared to: (1) enhancing public health and management skills of professionals and paraprofessionals; and (2) preparing urban health promoters to provide health services and information.

TITLE: PVO Health Promotion Network  
COST: \$260,000  
BEGUN: FY 85

This is a grant to the Seton Institute for International Development to improve nutrition and primary health care services for the women and children of Arequipa, Tujillo, and Lima. The four major project interventions are growth monitoring, oral rehydration therapy, breastfeeding, and immunization (GOBI).

TITLE: Training in ORT for Medical Professionals  
COST: \$5,000  
BEGUN: FY 85

A grant to the Universidad Peruano Cayetano Heredia helps train physicians and nurses in management of diarrheal diseases with emphasis on ORT.

## REGIONAL

TITLE:           ORT, Growth Monitoring, and Nutrition Education  
COST:           \$8,000,000  
BEGUN:         FY 84

The Institute for Nutrition for Central America and Panama, along with appropriate ministries and private institutions in the region, will focus on programs to reduce infant and child mortality and severe malnutrition through promotion of ORT, growth monitoring (GM), and appropriate feeding practices (AFP). Nutritional treatment of diarrheal cases, both during and after episodes of diarrhea, and prompt identification and nutritional treatment of protein-energy malnutrition are to be made available to children in this project. Activities in ORT involve: (1) studies on production, logistics systems, and approaches for increasing commercial sales of ORS; (2) regional and national workshops on ways to increase use of ORT, GM, and AFP; (3) training health professionals, paraprofessionals, and community health workers; (4) availability and improvement of the ORS distribution system; and (5) a regional clearinghouse to publish a quarterly newsletter and other materials for selected users.

# WORLDWIDE

## BUREAU FOR SCIENCE AND TECHNOLOGY

TITLE: Technology for Primary Health Care (PRITECH)  
COST: \$19,000,000  
BEGUN: FY 83

This project provides technical assistance and limited commodity support to promote use of ORT in primary health care systems. It includes technical assistance in selected areas of management and training. In addition, the project provides general rapid-response technical assistance and information services to AID missions and host countries to assist them in strengthening health service delivery capabilities, particularly ORT initiatives.

TITLE: Operations Research in Primary Health Care (PRICOR)  
COST: \$9,200,000  
BEGUN: FY 81

Through this project, selected studies are supported that address AID policy and programmatic questions concerning health service delivery issues. So far, ten studies have been conducted on ORT, in eight countries.

TITLE: Oral Rehydration Therapy—Health Education and Long-Term Planning (ORT-HELP)  
COST: \$4,800,000  
BEGUN: FY 84

This is a support project that provides developing countries with information on ORT and other child survival interventions for decision making in their national health programs. Activities include: (1) publication and dissemination of technical materials, including newsletters on diarrheal diseases and worldwide child survival programs; (2) an agreement with the Peace Corps to develop community-level training and materials for volunteers' use in promoting ORT in health programs; (3) a series of conferences and meetings to provide information on ORT and child survival related activities; (4) technical assistance for policy, program evaluation, and information exchange; and (5) development and management of a Health Projects Database including information on all AID-funded health projects, and a major ORT data subset that tracks country-specific ORT activities.

TITLE: Pediatric Clinic Diarrheal Diseases Research  
COST: \$3,000,000  
BEGUN: FY 84

A grant has been given to the International Center of Infant Nutrition and Gastrointestinal Diseases of the Children's Hospital of Buffalo, New York, to train pediatricians from developing countries to conduct research on chronic diarrheal diseases.

TITLE: Water and Sanitation for Health (WASH) II  
COST: \$19,700,000  
BEGUN: FY 84

This is a technical support project to develop and provide technical resources for the improvement of water supplies and sanitary facilities in the developing countries. The project provides training and health education in environmental health, hygiene, and sanitation, including ORT.

TITLE: Mass Media and Health Practices  
COST: \$11,700,000  
BEGUN: FY 78

The purpose of this project is to develop and apply a communications methodology for reaching rural mothers to treat and prevent infant diarrhea. Instructions in the administration of ORT and related child practices are the major health education objectives. Mass media coverage through use of radio and simple print materials in cooperation with village-level health workers involves rural communities in promoting better health practices. Health education methodology is being adapted by the participating host country institutions. A follow-on project, HEALTHCOM, has been approved in FY 85 for \$13,700,000 to expand program activities to ten new countries.

TITLE: CSAP—Support  
COST: \$1,156,000

A supporting grant to the Johns Hopkins University has been given to improve the delivery, use, and effectiveness of child survival technologies and their applications to developing countries. The project includes applied research, evaluation, and training. The ORT component involves field-testing of new oral rehydration solutions, vaccines to prevent diarrhea, and dietary management of children during and after diarrheal illnesses. This effort will result in the development of clinical, epidemiological, and laboratory tools, as well as statistical methods to support these investigations in developing country settings.

TITLE: Supply Procurement and Promotion of ORT (SUPPORT)  
COST: \$1,973,000  
BEGUN: FY 85

The project provides low interest loans to host country private companies, develops guidelines for private sector production of ORS, and plans to sponsor an international meeting on ORS production. Additionally, it also provides a mechanism for USAID Mission procurement of ORS.

## BUREAU FOR FOOD FOR PEACE AND VOLUNTARY AGENCIES (FVA)

TITLE: Save the Children Foundation (SCF)  
COST: \$2,870,000  
BEGUN: FY 85

This grant to SCF promotes better health and survival of children and their mothers in Bangladesh, Bolivia, Ecuador, and Zimbabwe. Training for health services is done at three levels: (1) family—parents are taught how to administer ORT and informed about immunization sessions and prenatal services in the clinics; (2) community—health promoters are trained on basic health services procedures; (3) health center—SCF and MOH staff are trained at the institutional level. In addition, in Ecuador for example, regular “health fairs” are planned to provide access to services (e.g., immunization and ORT) not readily available.

TITLE: Cooperatives for American Relief Everywhere (CARE)  
COST: \$2,164,000  
BEGUN: FY 85

As part of the Child Survival Action Program (CSAP), this project focuses on ORT in addition to other health interventions. Health education and training of mothers in ORT are the main activities. Projects are planned for Bolivia, Haiti, and Indonesia.

TITLE: International Child Care (ICC)  
COST: \$408,000  
BEGUN: FY 85

A CSAP grant to ICC supports expanded immunization and ORT activities in Haiti. The overall objective is to reduce child mortality (0-to-5 years) by at least 20 percent within three years. For diarrhea, the aim is to have at least 90 percent of mothers know how to use ORT after three years. This educational effort will take place at each of the 3,000 vaccination posts throughout Haiti, supplemented by other educational interventions (radio dramas, songs, posters, etc.) aimed at mothers and the general public.

TITLE: World Vision Relief Organization (WVRO)  
COST: \$690,000  
BEGUN: FY 85

This is a grant to WVRO to maximize immunization coverage and increase parental knowledge and use of ORT for control of diarrheal diseases in Zimbabwe. Parents, children under two, and pregnant women will benefit by project activities centered on monitoring and follow-up of individual mothers and children who are targeted by the government's ORT and immunization programs. In mobilizing church and community support for the National Health Program, a major effort will be made to involve indigenous organizations and churches. Household registration will be done, diarrhea-related mortality will be recorded, and lay coordinators' registries on immunization coverage will be reviewed in the project implementation process.

TITLE: Project Hope  
COST: \$700,000  
BEGUN: FY 85

Project Hope focuses on ORT and other child survival interventions in Guatemala and Brazil as part of the Child Survival Action Program. Activities in ORT include: (1) education of mothers through ORT demonstrations and discussions at the community level; (2) application of appropriate technology methodology in preparation of ORT solutions using locally available materials; (3) education of auxiliary nurses and rural health technicians in ORT; (4) increased accessibility to parenteral rehydration when needed. In addition, Hope also plans to deliver ORT packets through indigenous healers.

TITLE: Adventist Development and Relief Agency (ADRA)  
COST: \$888,000  
BEGUN: FY 85

A grant to ADRA focuses on well-defined target areas in Rwanda, Haiti, Malawi, and Bangladesh. Predominant in the program strategy are community-focused ORT and immunization interventions, which are complemented by promotion of breastfeeding, child spacing, and potable water activities. Specific activities in ORT include training and health education and promotional campaigns. ADRA also plans to supply ORS packets through village health workers

TITLE: Salvation Army World Service Office (SAWSO)  
COST: \$1,530,000  
BEGUN: FY 85

In Pakistan, Haiti, Bangladesh, and Kenya, SAWSO's projects are designed to provide GOBI (growth monitoring, oral rehydration therapy, breastfeeding, and immunization) services to rural communities. In Kenya and Haiti, SAWSO aims to reduce death from diarrheal dehydration by 25 percent by training and educating village health workers, Home League women, and mothers in ORT. Having endorsed the GOBI approach, SAWSO seeks to develop effective ways to introduce these low-cost interventions through its vast network of women's groups in the Home League, in order to increase child survival at the community level. The program includes development of appropriate training materials, provision of technical assistance, and supervision of women at the community level.

TITLE: Project Concern International (PCI)  
COST: \$1,025,000  
BEGUN: FY 85

In Bolivia and Indonesia, PCI expands its ongoing primary health care activities to intensify the ORT and immunization sectors. Its primary focus is the training of community health workers and traditional birth attendants for services in remote and under-served communities.

TITLE: Minnesota International Health Volunteers (MIHV)  
COST: \$344,000  
BEGUN: FY 85

The Kasangati Health Center in Uganda is being aided through this project. The purpose is to establish a decentralized health delivery system reaching out to 9,600 children under five years old, and to mothers of child-bearing age. The goal of extending primary health care activities to the villages is to provide immunization to 80 percent of the children aged five years and under, reduce malnutrition in young children by 25 percent, and reduce diarrhea by 25 percent per year. Integrated activities to achieve these goals include expansion of maternal and child health (MCH) and young child clinics to five days per week. In addition, second year post-graduate students of pediatrics and public health of the Makerere Hospital in Uganda will be given comprehensive MCH training.

TITLE: Foster Parents Plan (PLAN)  
COST: \$474,000  
BEGUN: FY 85

This is a grant to PLAN to expand the health component of the integrated community development program in Jacmel, Haiti. The principal objectives are to immunize 100 percent of target children and reduce infant and child mortality from malnutrition and diarrhea. Sixty social workers will be trained to expand their role in health education. They will conduct health education programs (which include ORT) for mothers with preschool children and will follow-up and reinforce the health messages through individual family visits.

TITLE: Catholic Relief Services (CRS)  
COST: \$314,000  
BEGUN: FY 85

This is a grant to CRS to improve the nutrition and health standards of 3,000 infants and children in Bolivia, by helping the women's clubs become as sufficient as possible in meeting the community's health and nutrition needs. The ORT component involves the establishment of a self-financing pharmacy to provide a ready supply of ORS and other vital medicines.

TITLE: International Eye Foundation (IEF)  
COST: \$442,000  
BEGUN: FY 85

This program focuses on preventive and therapeutic eye health care services in Malawi. However, the overall program strategy includes activities such as immunization against measles, teaching mothers and traditional birth attendants about ORT, and nutrition education and growth monitoring.

## **BUREAU FOR PROGRAM AND POLICY COORDINATION (PPC)**

TITLE: Grant to UNICEF  
COST: \$7,500,000  
BEGUN: FY 85

This grant to UNICEF makes funds available to indigenous private voluntary organizations for reducing infant and child mortality and morbidity. Program interventions include health education in ORT, immunization, growth monitoring, and nutrition. Activities will complement and facilitate the work of AID and other donors in Turkey, Indonesia, Nigeria, Sudan, Djibouti, and India.

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