MIDTERM EVALUATION REPORT
NATIONAL ORT PROGRAM
UGANDA

A Report Prepared by PRITECH Consultants:
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<td>ADMS</td>
<td>Assistant Director of Medical Service</td>
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<td>AMREF</td>
<td>Africa Medical Research Foundation</td>
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<td>CBHC</td>
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<td>CCCD</td>
<td>Combating Childhood Communicable Disease Project</td>
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<td>Control of Diarrheal Disease</td>
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<td>Continuing Education and Training Unit</td>
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<td>Community Health Worker</td>
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<td>Central Medical Stores</td>
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<td>DANIDA</td>
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<td>Essential Drug Management Program</td>
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<td>Ministry of Information</td>
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<td>WHO</td>
<td>World Health Organization</td>
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</table>
MID-TERM EVALUATION REPORT ORT PROJECT UGANDA

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

I. INTRODUCTION 2

II. ORT PROJECT - EVALUATION OF PHASE I 3

A. PROJECT BACKGROUND 3

1. General Context 3

2. CDD Program - General Outline 4

3. Implementation Arrangements 4

   a. MOH 4
   b. UNICEF 5
   c. USAID 6
   d. CDC 6

4. Political Context 6

B. PHASE I ACTIVITIES: ACHIEVEMENTS AND CONSTRAINTS 6

1. Oral Rehydration Salts 6

   a. Procurement and Delivery to Central Medical Stores (CMS) 6
   b. Storage and Distribution 8

2. ORT Units 10

3. ORT: Training and Promotion Activities 12

   a. Mid-level Managers 12
   b. Operational Level Training 13
   c. Health Education Materials 16
   d. Incorporation of ORT Component in Health Workers' Formal Training 16

4. Operational Research and Studies 18

C. UTILIZATION OF ORT 20

1. ORS 20

2. Home Based Solutions 20

D. ASSESSMENT OF PROJECT IMPACT 21
III. ORT PROJECT - GENERAL CONSIDERATIONS AND PERSPECTIVES

A. GENERAL POLICY ISSUES

B. ORT PROJECT PHASE II: SUGGESTED STRATEGIES

1. Within the Health Care Delivery System
   a. Articulation with Primary Health Care
   b. Involvement of Other Health Care Providers

2. Alternative Communications Networks
   a. Primary School Health Program
   b. Mass Media Programming
   c. Linkages with Other Programs

C. PLANNING FOR THE FUTURE

1. Local Manufacture of ORS

2. Sustainability of ORT Project

3. Timeframe for Donor Involvement

D. CDD: A GLOBAL APPROACH

1. Epidemic Investigation and Control

2. Environmental Sanitation Measures

IV. CONCLUSIONS AND RECOMMENDATIONS
EXECUTIVE SUMMARY

A two person team including a PHC MD and a health educator was in Uganda for four weeks (2/8 to 3/7/87) to carry out the mid-term evaluation of the national ORT program. This program, initiated in 1984, is being funded by MOH, UNICEF and USAID. On the whole, the team found that the purpose of the project paper (to increase awareness of ORT and availability of ORS in Uganda) was being achieved.

The considerable political unrest in Uganda during the first phase of the project and the resulting economic collapse have been and continue to be major obstacles to the implementation of any development activity. The USAID mission was actually closed after the coup in 1985 and has been reestablished recently. International staff were reluctant to stay in or come to Uganda (which had an impact on the technical assistance UNICEF provided) and the national staff that still remained in the country worked in extremely difficult material conditions. Considering the situation, UNICEF, and also MOH staff, should be commended for what has been done to date.

Many problems encountered by the team have to be handled in that context:

- Supply of ORS to Uganda is slowly catching up with the backlog; a reliable and timely delivery system is a prerequisite to more effective -- and much needed -- in-country management.

- The health staff training component of the program has, on the whole, been implemented satisfactorily.

- The operational research component is suffering from the lack of technical expertise and is still in the initial stages.

The second phase of the program will focus on reaching the population and include a major component of mass communication. Management issues at the peripheral health units should also be addressed if efficient and appropriate basic health care is going to be provided to the rural areas. The government's policy move towards decentralization, integration and promotion of self-reliance activity should be encouraged.
I. INTRODUCTION

This evaluation is intended as an assessment of Phase I of the Uganda Oral Rehydration Therapy Project. Because Oral Rehydration is only one component of the larger Control of Diarrheal Disease (CDD) Program, the evaluation extends to encompass this program and the broader context in which it is situated.

The first section of this paper briefly summarizes the CDD program in Uganda, and the roles and responsibilities of the participating agencies. This is followed by a description of the extent of achievements of the planned project inputs for Phase I, an analysis of the problems encountered, a brief assessment of ORT utilization, and considerations on the project's impact on the health status of the target group.

The second section addresses general policy issues of the CDD program, particularly with respect to Ministry of Health (MOH) long-range planning. It then discusses suggested strategies for Phase II of the ORT project, within and beyond the present health care delivery systems, and sets forth specific considerations for planning, e.g., project sustainability, present economic constraints, and security issues.

Recommendations based on Phase I experience and suggested strategies for Phase II are consolidated and summarized in the final section of this document.
II. ORT PROJECT - EVALUATION OF PHASE I

A. PROJECT BACKGROUND

1. General Context

Uganda is characterized by its environmental and ethnic diversity. Its present population is estimated at over 15 million inhabitants, and its current growth rate at 3.2%. Ninety percent (90%) of the people live in the rural areas. Per capita income in 1982 was US$230, which placed the country in the lower 25% of African countries, in spite of its true potential productivity. This situation is due to 15 years of domestic political turmoil, armed conflicts and economic mismanagement. Black market is flourishing and inflation reached 99% for the two months of January and February, 1987. Since the accession to power of President Yoweri Museveni a year ago, the security situation in the southern area has improved dramatically, but the present economic situation is seen as increasingly untenable. Major reforms are expected in the next months and are presently being discussed with World Bank and the International Monetary Fund. Public policy of the new government has been to promote decentralization of government services and to foster the principle of self reliance for sustained development.

The country is presently divided into 33 districts, which are in turn divided in counties, subcounties (or Gombololas), parishes and villages. "Resistance Committees" (RC) have been set up in the past year to promote village level self reliance, intersectoral coordination, and grassroots political participation. At present three levels are functional (RC1 at village level, RC2 at parish level, RC3 at subcounty level), but articulation with the district level government is being planned with the creation of RC4 and RC5.

The economic collapse during the liberation war (1978-79) brought about the collapse of government services and centralization in the capital of remaining fiscal expenditures. Social service sectors were hit hardest since meager national resources were rechanneled to other sectors (e.g. military spending). Health services progressively deteriorated, health centers were looted and disease patterns increasingly reflected poor sanitation and hygiene, low preventive care and the lack of vector control. Morbidity and mortality had clearly risen but in the absence of vital statistics and reliable epidemiological data, quantification is difficult.

Infant mortality rate is estimated at 120% live births and life expectancy at birth is 50 years. As government services became increasingly unreliable (due to shortages of drugs and other supplies), non-governmental organizations (NGOs) took over the provision of essential services and now provide approximately 60% of rural health care. At the same time, traditional healers have regained a high level of popularity and have come to account
for 2/3 of the profit making private sector. A first recovery program (under the second Obote government) focused on the rehabilitation of existing infrastructure on a minimal basis (hospitals and rural facilities), acceleration of immunization, and strengthening of primary health care. Estimates of the health budget as a percentage of total budget slowly increased to 5%, but underfunding of government recurrent expenditures is a major problem. UNICEF funds and technical assistance have played a major role in the provision of drugs, support for Oral Rehydration Therapy and immunization.

2. **CDD Program - General Outline**

The Uganda Control of Diarrheal Diseases (CDD) program was initiated by the Ministry of Health (MOH) in 1983. The overall goal of the CDD program is to reduce child mortality due to diarrheal diseases. In order to achieve this goal, the following strategies were identified:

- Case-management using Oral Rehydration Therapy (ORT);
- Epidemic Investigation and Control;
- Maternal and Child Health Care Practices;
- Environmental Sanitation Measures.

Program activities were divided into two phases: Phase I, 1984 - 1986, and Phase II, 1987 - 1988. The primary objective of Phase I was to establish Oral Rehydration Therapy (ORT) as the principal medical strategy in the treatment of childhood diarrheal diseases, primarily via the procurement, distribution, and use of Oral Rehydration Salts (ORS). The other three general strategies would also be considered during Phase I but are to be developed more fully during Phase II. The estimated cost of the program was US$11.5 M to be spread over five years, of which $4.9 M were to be provided by UNICEF, USAID and CDC.

3. **Implementation of Arrangements**

a. **Ministry of Health (MOH)**

The overall program director is the Assistant Director Medical Services (ADMS) for Public Health, Dr. Okware.

In January 1984 the MOH named Dr. Paul Dekeitto as CDD program manager whose responsibilities encompass the day-to-day project operation and administration. Although the manager's job description requires he should be committed full-time to the program "without interference from other responsibilities either workrelated or personal," the economic realities in Uganda and the scale of government salaries render this condition unrealistic. For this reason, in July 1985, Dr. John Mudusu was
appointed as Deputy Project Manager to assist Dr. Sekeitto. The CDD office staff at central level also includes a secretary and a driver. UNICEF renovated and equipped a partially completed building at the Ministry Headquarters to be used as CDD program office. A vehicle (short wheel-based Suzuki) was provided for transportation and a Land Rover has been ordered, but as of yet it has not been allocated to the program management.

At operational level, the District Medical Officers (DMO), as part of their normal duties, supervise all CDD program activities at district level, under the direction of the CDD program managers.

Coordination between CDD and other Primary Health Care (PHC) activities was initially the responsibility of the Family Advisory Committee, chaired by the ADMS for PHC and Maternal and Child Health. Due to changes in Ministry organization, this committee appears to be no longer functioning. The standing CDD sub-committee that was to meet every three months to formulate guidelines for CDD has not met either for at least the past 18 months.

MOH counterpart funding has been limited to date to salaries and wages, with the exception of two disbursements for other operating costs ($10 M UShs. in 1985, and $24 M UShs. in February 1987). This has been a severe limitation to effective program management, given the obvious needs for fuel and allowances for staff.

b. UNICEF

UNICEF is the principal organization working with the MOH in the design and implementation of the CDD program. As such, it is responsible for coordination with MOH and donors, program monitoring and evaluation, as well as providing technical assistance. Long-term technical assistance was originally planned to be provided by three professionals: one full-time MCH trainer, one part-time Health Education Specialist, and a part-time Research and Evaluation Specialist. Due to staff reorganization, there is at present an Assistant Program Officer working as the full-time counterpart to the CDD program manager, plus several staff members who contribute to the CDD activities. Besides its own contribution to the CDD program ($1,136 M), UNICEF (with the GOU) is responsible for expending USAID Grant Funds for Operations Research and Training.

It should be noted that UNICEF offices are in Kampala whereas the Ministry of Health is located in Entebbe (30-45 minute drive); telephones are inadequate and there is no UNICEF liaison office in Entebbe. As a result, coordination on a routine day-to-day basis is a difficult process. The Annual Report for 1986 of the CDD program was not available during the period of evaluation.
c. USAID

The initial contribution of USAID was reviewed in May 1986 and increased to $3.6 M. USAID is directly responsible for the purchase of the Oral Rehydration Salts. Extra funding is allocated to operational research, training activities, financing a feasibility study on local management of ORS, and fielding and administering a project evaluation team.

d. CDC

The Centers for Disease Control, Atlanta, was to provide short-term technical assistance upon request through the CCCD project in the following fields: research or survey design and implementation, communication studies, and health information systems development. A consultant from CDC came to Uganda in spring of 1984 and helped with the conceptualization of the program, the design of a baseline survey in Mbale, and the set up of the mid-level management training.

4. Political Context

The ORT project was started during the second Obote government. At that time, the country enjoyed comparative stability, with the exception of the Luwero triangle area (which directly affected Kampala) and at one stage, the interruption of all communications with the West (Fort Portal). On July 27, 1985, a bloodless coup overthrew Obote's regime and several months of major unrest followed. Most bilateral organizations, including USAID, temporarily left the country. Military activities in Luwero extended towards the East. Looting became an everyday occurrence; health centers and dispensaries were not spared and consequently lost much of their operating equipment. In January 1986, Museveni came into power. At present the southern part of the country, where 75-80% of the population resides, is politically stable and secure, but military activities are still going on in the North, prohibiting expansion and follow-up of program activities in those areas.

B. PHASE I ACTIVITIES: ACHIEVEMENTS AND CONSTRAINTS

1. Oral Rehydration Salts

a. Procurement and Delivery to Central Medical Stores (CMS)

The project agreement with USAID was signed in July 1984. During the first year, ORS packages were supplied by UNICEF (1,117M) and WHO (55,000), others were supplied directly to NGOs working in Uganda. USAID was to supply 2 million packets in 1985, half in March and half in September. The first million arrived in two consignments (April and July).
By the end of July 1985, the USAID Mission had left Uganda due to the coup; the order for the second million was put on hold and the project "frozen." Due to communication problems, this was not known by the MOH until mid October, by which time CMS only had one month supply in stock. Two consignments of 100,000 packets each were airfreighted to the country in December 1985 and February 1986. Once the emergency period was over, sea freight was resumed and 375,000 packets were delivered in April.

However, delivery was soon interrupted again. Major disruptions in the pipeline occurred in 1986 due to the establishment of stringent U.S. regulations on policy control and due to problems with shipping companies. UNICEF airfreighted 300,000 packages as an emergency measure. Two USAID consignments arrived in July (1 million packets total). The most recent ones were delivered in December 1986 and January 1987 (1 M). At the present time, 1.5 million must still be delivered to catch up with the backlog for 1986.

The sporadic and insufficient supply of ORS has had major consequences on the CDD program: deliveries to the health units had to be rationed, ORT units had to close temporarily, morale of staff was impaired, and the credibility of the program as a whole was compromised. At the time the evaluation was carried out, the situation was just getting back to "normal"; it could hardly be expected that delivery and ordering systems downstream, and prescription and utilization of ORS at the periphery would be satisfactory.

The lesson to be learned is that reliable and adequate supply of ORS is crucial to the ORT program. Several recommendations may be made at this stage: staff working at CMS asked whether they could be informed ahead of time (and not two weeks prior to delivery as happens now) of the arrival date and size of the consignment in order to schedule simultaneous quarterly deliveries of ORS and other drugs to the district. At present ORS is distributed according to available stocks. We believe ensuring timely notification would contribute to improved and integrated management at country level. However, the USAID Project Officer in Kampala has at present no means to provide such information: shipping to Mombasa is the responsibility of the U.S. manufacturer, and schedules to date have been unpredictable. One solution would be to subcontract to a clearing and forwarding company ORS shipment from manufacturers to Entebbe. The most cost-effective solution would be, however, for USAID to purchase ORS packets from UNIPAC so that they could be shipped to Uganda with the

* Not only at the operational level but also at the management level: since ORS supply was seen as the backbone of the CDD program, personal efficiency of the managers was at stake.
other essential drugs and thus handled globally by CMS. The ORS packets presently supplied by USAID include sodium bicarbonate in their formula. In 1984, a citrate formula offering improved stability in tropical conditions was adopted by WHO/UNICEF. The packets provided by UNICEF to Uganda since early 1985 (in particular those included in the Essential Drug Kits provided to each health unit) contain this formula. We would, therefore, recommend that USAID consider supplying the same formula in the future.

b. In-country storage and distribution

Storage facilities in CMS (Entebbe) are no longer a problem, since the UNICEF funded construction of adequate warehousing. The major complaint is the lack of pallets. All handling is done by hand.

Supplies are sent to the districts on a quarterly basis. The vehicle pool would be adequate if repairs would be done on a timely basis. The major bottleneck is due to financial procedures: when a vehicle is sent for repair, the workshop makes an estimate of costs, Ministry of Health sends it to Ministry of Finance who sends the approved funds back to MOH, etc. The whole process can last three months...and longer if spare parts have to be ordered from another country.

On the whole, CMS distributes supplies in two ways:

- Prepackaged (from UNIPAC) standard drug kits are sent to the district for the health units included by the essential drugs program.

- Drugs are supplied according to previous ordering and availability of stock to the medical superintendent (MS) of the hospitals and to the District Medical Officers (DMOS). This allows DMOS to provide health units in their district with complementary supplies when some of the essential drugs do not last the expected three months.

ORS do not really fall into any of these categories: some are included in the standard kits, some (USAID) are supplied directly to MS and DMOS. However, in 80% of the cases, no previous ordering has been done and CMS staff "send them anyhow because they probably need them."

Obviously, this system is not very satisfactory and efforts should be made to improve the estimate of needs and utilization; this would be a first step to assess the efficiency of the ORT program and is essential to reinforce management procedures. As a practical illustration, the evaluation team found in a district capital:
That the government hospital received 10,000 packets every three months and only used 1,000 a month and thus had ORS boxes piling up;

That the nearby district medical store (DMS) bitterly complained of the insufficient supply of ORS packets. Part of the explanation given was that "people were not aware they could order" since it has only recently become possible, due to the end of ORS rationing. Such situations could easily be avoided with improved communications between CDD/Entebbe and the districts.

Record keeping at CMS level appeared adequate, but the information recorded (how many ORS packets are being delivered to whom every three months) is not processed and utilized by the CDD management office on a regular basis (if at all). At a district level, the evaluation team could not find inventory sheets giving an accurate account of existing records of ORS either at hospital or at DMS level.

In each of two DMS visited by the team, one of the storage rooms was allocated to the immunization program (UNEPI); supplies in this room were stored on shelves, and recording was done. The rest of the supplies were relegated to a common location and often dumped on the floor. Storage procedures and inventory records could easily be improved. Supervision and support of the district health teams are "sine qua non" conditions to an efficient ORS supply system.

Most health units (including NGOs) at the district level prefer (or would prefer) to obtain their supply of ORS packets from the district medical stores. However, the present distribution and storage system cannot adequately meet the needs. Timely delivery of supplies from the DMS to the health units is also seen as a problem: most districts, at present, have as their only transport a long-wheel based Suzuki, provided by UNEPI.

It therefore appears that the weakest link in the ORS supply chain is at district level. Improved management procedures and integration with health programs that benefit from sufficient infrastructure, staff and operating funds (like UNEPI or EDMP) would bring about major changes in program effectiveness, reliability and staff commitment. An appropriate (an integrated) health and management information system does not exist at this stage although it is long overdue.

A first step should be to design and implement simple monitoring sheets at district level that would allow refining the supply system between Entebbe and the district. DMOs and MSs should be strongly encouraged to order ORS in the same way they order their other supplies.
In 1979, the Catholic and the Protestant Medical Bureaus decided to set up "Joint Medical Stores" (JMS) as a common drug supply venture for member church health programs. Generic drugs are purchased from a reduced list of essential items and sold on a non-profit basis to the beneficiaries. ORS packets provided by the government are supplied for free. As we have seen, Protestant and Catholic health programs account for over 60% of health care delivery in the rural areas and for most of the primary health care projects in the country. As such they are a unique channel to reach the communities and extend the coverage of the ORT program.

However, JMS at this point are limited in their activities at two levels:

- Insufficient transportation between Entebbe and Kampala, in particular to retrieve ORS from CMS;
- Insufficient storage room: although the turnover of stocks is high, the existing building is packed full and several containers have already been added to supplement it. The sister in charge hopes to solve her immediate problem by borrowing space in a neighboring warehouse presently under construction.

Some of the missions' land is still unused and is bordered by a road which would provide easy access; a possible recommendation would be to add another building there.

Record keeping procedures seem satisfactory and some degree of accountability for drug utilization is enforced. Distribution beyond JMS was not seen by the investigators as a major concern since each mission is responsible for the transportation of the supplies they order.

2. ORT Units

The establishment of ORT units in hospitals and health centers country-wide was intended for multiple purposes. First, the ORT unit was to serve as a preliminary screening area for diarrheal disease patients coming to the health facility. Staff of the unit could assess the status and decide whether or not to admit the patients. Second, both in- and out-patients would receive ORT, observe mixing demonstrations, and receive health education on ORT and related topics, such as making home-based solutions, feeding during diarrhea, etc. Third, these ORT units were designed to serve as training sites for health staff in the use and management of ORT. However, it is not clear to the investigators exactly if or how they have been used in this sense, nor who has been trained in them aside from the responsible staff.

Since the CDD program began, 63 (as compared to the planned 50) ORT units have been opened in Uganda. These units generally
consist of a room in a pediatrics department where the UNICEF-provided kits are kept. The kits consist of water-boiling and storage equipment, mugs, spoons, a record book and pens, infant scale, and other sundry items. The units were set up by a team from Mulago Hospital consisting of a pediatrician and a nursing sister. UNICEF paid their allowance and provided transportation for the exercise. The team operated a maximum of two units per day. Each opening included a two hour lecture for most of the hospital staff; the session covered aspects of diarrheal disease, the CDD program, and ORT unit management.

The ORT units visited by the evaluation team had a number of shortcomings in their operation. They are understaffed, or staffed by personnel not needed elsewhere. Records are poorly kept and systems ill-defined. The present role of the ORT units within the health facilities is not clear. They are more often than not seen as an addendum to, rather than an integral part of, the pediatrics ward. In many cases, after 5:00 p.m., when the day nurse leaves, all the equipment (including ORS packets) remain locked up in a protective closet and no one has access to it until the day nurse resumes work the next morning. This is frustrating, even dangerous, if children admitted to the pediatrics ward in the night need rehydrating.

One example of an ORT unit that functions well is at Nsambya Hospital in Kampala. The reason for this unit's success is simple: rather than being a separate entity, it is integrated directly into the pediatrics ward. All children with diarrhea, whether complicated (e.g., with measles, malaria, bronchial pneumonia) or simple, are given ORS as a rule. Outpatients are given packets to take home, and taught about home-based solution. Because it is not cut off from the rest of the hospital, the ORT unit has become a service and a help rather than an extraneous activity to maintain.

It is our recommendation that ORT units in other facilities follow suit and be incorporated into the general set up of the health facility. To avoid the problem of inaccessible equipment after hours, at least one person from each shift should have responsibility for this equipment, have keys to the storage cupboard, and be trained in admission and management procedures for dehydrated children.

Another problem encountered concerns the loss of equipment due to theft. Staff complain that they're unable to carry out demonstrations on ORT without the proper saucepan, hotplate for boiling water, etc. Experience has shown that the use of fancy or foreign equipment can discourage mothers from repeating ORT mixing at home for lack of comparable material. It is the opinion of the investigators that, in order to demystify the process, demonstrations in ORT units (and other health facilities) be carried out with equipment easily available in the local markets.
Several hospitals (government and NGOs) have adopted the strategy of preparing in advance enough solution to treat in-patients across the board, whether adults or children, that present diarrhoea, vomiting, high fever and even sickle cell disease...as long as adequate supervision by nursing staff, and/or (preferable) by the mother or patient's family is done (so that mugs do not remain empty and that ward containers are refilled according to need). This practice was seen by the investigators as positive since it facilitated management and promotion of ORS therapy.

Some hospitals have prepared local rehydration solutions for years. Some degree of surveillance should be exercised in order to assess formulas and achieve some degree of quality control. Here again, this practice can offer interesting alternatives in case of insufficient ORS supply.

3. ORT: Training and Promotion Activities

The CDD program is designed to concentrate heavily on promotion, orientation and training in the use of ORT. The promotion activities began with two one-day conferences held to sensitize the Uganda medical profession. The first of these was held in 1984; the proceedings of this conference were published in the Uganda Medical Journal with the assistance of UNICEF. The second was held in Fort Portal in March 1985, by the Uganda Medical Association. Again, in order to influence the Uganda Medical profession, the Department of Pediatrics, Makerere Medical School, with assistance from UNICEF, published a booklet entitled "Oral Rehydration Therapy - A Uganda Perspective."

Training of health personnel, run jointly with the Uganda National Expanded Program of Immunization (UNEPI) and the recently-integrated Essential Drugs Management Program (EDMP) is organized at two levels: the first for mid-level managers (MLM), the second for operational-level personnel (OPL).

a. Mid-level Managers

This category comprises the members of the health management team at the district level: District Medical Officer (DMO), District Nursing Officer (DNO), District Health Visitor (DHV), District Health Inspector (DHI), District Health Educator (DHE), Medical Superintendents, and Nursing Officers at district-level hospitals. Regional health teams, where they exist, and members of NGO directorship are also included in the MLM training.

MLM training was preceded by a series of two one-week facilitator courses, designed and implemented with the assistance of a CDC consultant in mid-1984. These courses trained a total of 35-40 people to serve as a general resource pool for future training. The MLM training is carried out as a juxtaposition of four
programs: CDD, UNEPI, EDMP and CETU (Continuing Education and Training Unit). A task force composed of the managers of each of the four programs, plus training officers, meets as needed to organize each training session (training officers are representatives from each of the four programs: two from UNEPI/CDD, one from EDMP, four from CETU, plus a representative from the office of the ADMS for Training). The task force identifies the participants and the facilitators. Each MLM course lasts two weeks and includes about 30 participants. It was originally intended to have as many as ten facilitators per training, but due to inflation each course will now use only six. A project manager from each of the four projects involved attends each MLM training session. Both Drs. Sekeitto and Mudusu have been involved in these training sessions.

The recently revised teaching material for the MLM training consists of twelve modules and two manuals. Each participant receives a full set of modules and manuals to keep. Training includes small group discussion and practical demonstration. CDD is discussed in the module on Target Diseases as well as during its own module. To date a total of ten MLM courses have been held, training a total of 248 participants covering 32 districts. It is significant that due to accidental but fortunate counter-clockwise scheduling, MLM trainings were held early on in areas that are now troubled by military activity, and later moved on to areas that had recently become safe. It must be noted, however, that despite the success in training in 32 of the 33 districts, subsequent (and current) political difficulties have made follow-up in many areas difficult or impossible.

b. Operational Level training (OPL)

Once a group has successfully completed the MLM training, five people from each district are designated to plan, organize, and conduct a similar course for the operational staff in their district. These courses are one week long and again include approximately 30 participants. The first OPL training in each district is executed together with a training officer, and subsequent ones are conducted by the district team alone. The five district facilitators then become district supervisors. Although in theory the first OPL in each district should also be attended by a program manager or major facilitator, CDD managers have not been able to participate on a regular basis.

The number of OPL trainings per district depends on the number of health units and operational staff. The staff to be trained first are identified as those in charge of health units: health centers, dispensaries, and aid posts. In both MLM and OPL courses, staff of NGO medical facilities are included; however, private clinic staff are not. This is unfortunate; the investigators' experience showed that Oral Rehydration Salts are available in private clinics, but staff are inadequately trained in the proper utilization. It is recommended that future OPL trainings include some personnel from private clinics in order to
ensure the correct promotion of ORT as well as other government health policies.

To date a total of 17 OPLs have been held, training a total of 498 operational-level staff. Only two districts, Tororo and Mbale, have covered all their units. Logistics and funding for MLM and OPL trainings are provided to conduct the two remaining MLM courses and 16 OPL courses in 1987, and 40 more OPL in 1988/1989 (for a total of 1200 participants). Rapid inflation is making training costs skyrocket: the MLM course that used to cost 1M UShs. must now budget for 10-14M. In Kampala, with big city prices, one course costs 33M UShs. Economic inflation apparently is not the only reason for inflated course costs. These trainings are particularly successful in terms of attendance due to the daily allowance distributed to participants at the end of each course. District-level personnel, when creating the budget request for an OPL, have been known to calculate slightly above the necessary costs and then attempt to cut corners on food and lodging, and pocket the profit.

Refresher courses for MLM and OPL are not yet planned on a regular basis. However, district officers may assess their staff during supervision and request a refresher course if necessary. CETU, in an attempt to analyze the need for follow-up on the very dense MLM course, found that results of a post-test administered six months after the training went up a full 20 points (from 56% to 76%) from the same test administered immediately after the training. This could indicate that either the course was so dense that it took considerable time for the participants to process and digest the material, or that the material was better learned once put into regular practice.

In general, we found training to be one of the most successful components of the CDD program, particularly in terms of the integration it has achieved with UNEPI and more recently with the EDMP. However, several problems are evident which should be addressed in the continuation of the program. First, there is no apparent provision for follow-up and evaluation of the trainings. Both the MLM and OPL trainings are densely packed with a great deal of subject matter over a short time period.

Training officers are attempting to pare down some of the material in the revised course modules, but want to avoid compromising the quality of the modules. We recommend that a system of periodic evaluation and follow-up be included in the training design, to allow the timely correction of poorly-learned or forgotten subject matter, to aid in future course revision, and to adequately assess the need for refresher courses. One example of a successful system of continuing education and retraining is a Distance Teaching Program implemented by CETU in Mbale. Correspondence courses are based on a series of adapted AMREF modules on Child Health, Communicable Diseases, and Community Health. So far 800 people have enrolled in this program, 50 graduated within their first year.
Second, although graduates of the courses are versed in the theory and practice of ORT, there seems to be little or no integration of ORT in the management system of the health units. Health workers beyond the district level were unable to tell us how many packets they received in a specified period, nor how many they needed if they found their allotment inadequate. Recording and storage procedures that are carefully followed for the UNEPI portion of their work are not reflected in the management of ORT. Disease surveillance, also, seems to be limited to immunizable diseases, and not necessarily diarrheal diseases. Although the training modules in theory address CDD as well as UNEPI when dealing with surveillance, supervision, logistics, and target diseases, in practice there is very little management applied to the CDD component. This is a shortcoming that will need to be addressed by future training, and reinforced by follow-up and supervision.

c. Health Education Materials

Besides the materials (modules and handbook) designed for use in the MLM and OPL trainings, health education materials on the ORT program are limited to a set of adapted posters and leaflets designed for use at the health facility level. Five thousand copies of the posters have been printed in English; an indeterminate number in Luganda. Four of the six posters have also been reproduced in leaflet form for distribution to the general public. So far 50,000 copies of each of the four leaflets have been printed and distributed. Many health facilities visited had little or no remaining stock of the leaflets, but reprinting has been postponed, awaiting the completion of translation into four more local languages: Ateso, Luo, Runyankole, Rukiga, and Runyoro; Rutoro. It is not clear to the investigator how close the drafts are to approval and printing; in the meantime, health facilities are suffering from a lack of educational materials on ORT.

The existing materials are adequate for their target group (health workers), most of whom are literate in English. The translations will also be useful; it is estimated that 55% of the population is literate in local languages. However, they do not begin to address a badly needed next step: education of the principal ORT user, the mother. Even after a lengthy group discussion on diarrheal disease, ORS, and ORT, mothers at a health clinic were still unable to interpret the above mentioned posters. Furthermore, the materials are only partially adapted to Ugandan reality. For instance, the poster leaflet describing the procedure for mixing home-based solution insists on teaspoons and sugar, two items often lacking at the village level.
d. Incorporation of ORT Component in Health Workers' Formal Training

Oral Rehydration Therapy as a medical strategy for the treatment of diarrheal disease is still a relatively new concept in terms of its acceptance by the medical professions. For this reason it was not surprising to learn that although included it has received little emphasis in the curriculum of healthworker training institutions. The present exception is Makerere Medical School, which in 1983 instituted a three-week obligatory rotation of Social Pediatrics for third year students, which introduces MOH strategies including ORT. Students study the subject again in their fourth year during a three-month session on MCH care. Due to the length of medical studies, the first group of students to have benefited from the Social Pediatrics course are just now entering the work force.

Previous medical graduates learned about rehydration for victims of diarrheal diseases, but in a clinical situation, that is those cases requiring intravenous drips or nasogastric tubes. It is clear that a great number of physicians in hospitals and in the field are not thoroughly convinced of the effectiveness of ORT as a therapeutic intervention. This poses a passive but formidable block to ORT promotion: if physicians are not convinced, the rest of the hierarchy of health care providers will not actively promote its use. Very little information was available on the present curricula for other levels of health personnel: Nurses, Midwives, Health Assistants, Health Visitors, Assistant Health Visitors, Health Inspectors. It seems that, as a rule, fluids are recommended for the treatment of diarrhea, but there has been little emphasis on ORT.

This is soon to change, however. A MOH Curriculum Review Committee, chaired by the ADMS/Training, has been working since mid-1985 on the revision of health worker training courses. As a result nursing and midwifery schools will now emphasize comprehensive, community oriented health care. All syllabi will emphasize the use of ORT, as well as suggested teaching techniques and demonstration to pass the message on to mothers.

The Curriculum Review Committee is assisted in its work by managers of various programs, e.g. CDD, who advise them on the relevant content. The Ministry of Education Curriculum Development Center is also working with training schools and tutors on the design of a teaching syllabus relevant to Uganda's own health issues.

It is regrettable that tutors in health worker training institutions were not systematically included in the MLM courses as had been originally hoped. However, we feel this could easily be rectified by holding a number of short courses designed for tutors (that is to say, at a significantly different level than MLM courses). These courses should attempt to reach tutors at all the major training institutions, in and out of Kampala, both
governmental or NGO. This would not only help in the promotion of ORT in training schools, but it would enlarge the pool of resource people available to facilitate future MLM or refresher courses.

4. Operations Research and Studies

The operational component of the program got off to a slow start, since it was not seen as a priority in the initial stages and the ensuing political unrest. By mid 1986, concern about the unspent USAID funds spurred UNICEF staff to revive it according to the guidelines set up in the project paper.

Guidelines were adapted from CCCD guidelines for operations research activities in East and Southern Africa, and distributed. A workshop at Makerere University was set up in August to sensitize people about the need and financial opportunity for operations research and to solicit proposals. The proposals were then reviewed by a selection committee. Six of them were selected and are presently being implemented in the following fields:

- Investigation of traditional case management of diarrhea in Uganda
- Educational approaches to correct harmful beliefs
- Evaluation of CDD program
- Assessment of domestic water quality

Other proposals were sent back for revision. A second seminar is planned for March 11 and 12. Dr. Andrew Tomkins (London School of Hygiene and Tropical Medicine - Nutrition Department) has been contracted by UNICEF Nairobi to participate. A third meeting is tentatively scheduled for April with a guest speaker from Bangladesh contacted by Dr. Sekelito.

In spite of the positive aspects of this process, the investigators believe the operations research component would benefit from a major revision in the immediate future. At present, no evidence was found that the expertise in operations research needed to orientate the program in an effective direction exists in Uganda, either at Makerere University or in the UNICEF office. Research is often seen as a basically academic process that should be carried out by lecturers or post graduate students. People presently involved in the committee are, for a great part, clinicians. The "Child Health and Development Center" and the Institute for Social Research have been involved but neither the Institute of Public Health nor the Nutrition Unit seemed to be informed, although both have longstanding interest and experience in field research.

The project paper recommended that CDD research be integrated with that of EPI and drug supply systems when appropriate to assure more effective use of funds. It also suggested specific studies and research activities to be undertaken (morbidity...
and mortality surveys for evaluation and monitoring purposes, KAP studies on diarrheal treatment, feeding practices, access to media channels and health services as a basis for the health communication approach) and other topics (such as availability of salt, sugar and standard measuring containers in the home and/or on the market, the effectiveness of various home-based ORT alternatives, the acceptability of community participation for cost recovery purposes, etc.). As we have seen in previous sections, information on these specific topics would be extremely useful to improve program orientation in Phase II.

We believe operations research should be seen as a tool for CDD management. Managers should identify their priorities as regards the need for information, and set up a time frame for collection of data and analysis. This approach is not systematic at this stage; we have been told for instance by the managers: "The operational level training needs to be improved, but first we need to evaluate what has been done to date." The logical next step would be: "We need operational research in that field, and we need results in three months. We have funds, let's initiate the process." This passage from management to operational research back to management, then to training and back to management is not done. Within the same "vertical" program of CDD, there are vertical components which have little if any interaction.

All people interviewed agree that short-term technical assistance would be useful:

- To identify what could become an effective center of expertise on operations research issues in Uganda;
- To help CDD management, UNICEF staff and the identified group to design a short, medium, and long-term plan for operations research, linking CDD with other MCM activities;
- To help each of the actors to identify their role and responsibility: the "center of expertise" should not necessarily be directly responsible for research implementation but should provide technical and methodological backup to field staff (government or NGO, health or other) who would incorporate research components into their routine activities, and be involved in the design, data collection, processing and analysis of information.

The baseline morbidity mortality survey designed and implemented in June of 1984 in the Mbale district with the help of a CDC consultant set up an interesting precedent that was never really followed. This survey was repeated the following year by MOH, but results of that survey were not available to the investigators.
Periodic short-term assistance was also seen by the staff in Makerere as a means for in-service training (the staff remaining in Uganda has not been exposed to operations research concepts) as well as a way to revive interest for research activities and to diversify the University's activities.

C. UTILIZATION OF ORT

1. ORS

Due to the lack of a reliable record keeping/data collection system, there are no qualifiable data available on the utilization of ORS packets. The project paper had originally planned to use such indicators as the utilization of ORS packets and the utilization of IV rehydration in health facilities. A prerequisite to any quantitative assessment of utilization of ORS is, therefore, the enforcement of an appropriate management information system which does not exist to date. However, from observation of the flow of stock and from discussion with health workers at all levels, utilization appears to be relatively high. The only problems cited were due to the recent lack of available packets; this should be rectified with the distribution of the recently received shipment, although it must be remembered that delivery to the peripheral health units is not always optimal.

Discussions with health workers and a small number of mothers demonstrated a significant level of awareness of ORS by the consumer. Health workers claim that once mothers are educated about the benefits of ORS, they have no difficulty accepting and utilizing it, even if it runs contrary to traditional practices (e.g. withholding foods and liquids). However, there is little information to verify this; a KAP study on the actual acceptability of ORS in the home may be a worthwhile topic for field operations research. One such study was done in the Tororo and Mbale areas by staff from the Nsamizi Institute for Social Development in Entebbe. A more refined version of this type of study should be encouraged.

2. Home-Based Solutions

As planned for Phase I, the CDD program has until now concentrated on the distribution and use of ORS packets. Badges and decals printed by the CDD program say: “We say Yes to ORS.” Home-based solutions have been promoted primarily as a contingency plan for mothers if and when they have no access to packets. As mentioned in the discussion on Health Education Materials, the recommended recipe for home-based solution requires sugar and teaspoons, both of which are often lacking at the village level. Sugar, when it is available, is imported and is thus prohibitively expensive.

There are a number of strategies which can be followed for the promotion of home-based solutions. Before any of these can be implemented, the CDD program must first define its policy concerning ORS vs. ORT. The MOH policy concerning the use of ORS
vs. the use of home-based solutions is, at present, not clearly defined. It is our recommendation that both channels be actively pursued. ORS packets should be made as widely available as possible, with concurrent promotion of home-based solutions made with culturally acceptable and locally produced (or easily available) materials. Due to the heterogeneity of the country, there will not be "the" perfect home-based solution, but most likely a number of region specific alternatives.

If, as suggested in the original project design, home-based solutions are heavily promoted in Phase II, a number of preliminary steps must be taken. First, research should be done on alternatives to sugar-salt-solution, utilizing available commodities. Some NGO run Community Based Health Care (CBHC) programs are already experimenting with alternative sweeteners: banana juice, honey, and sugarcane syrup. Recipes for these solutions are determined according to taste. Some operations research is currently being done on this subject, but there are as yet no conclusive results.

Second, there must be a strategy for the articulation of packets and home-based solution. One NGO visited claimed they had been having great success with promoting home-based solutions until packets became available again. Mothers often prefer the packets because of the mystery and power ascribed to a "medicine"; evidently mothers who had previously used home-based solution to prevent dehydration were now appearing at the NGO clinic with dehydrated children, in search of the ORS packets.

Third, the promotion of home-based solution will depend on a carefully planned and executed mass education and social mobilization campaign, using all available channels. This will be discussed in the section on suggested strategies for Phase II.

D. ASSESSMENT OF PROJECT IMPACT

Discussion of health impacts in a mid-term evaluation is, in general, premature. However, we believe that a few considerations should be made at this stage. The goal of the Uganda CDD program is to reduce the incidence of child mortality from diarrheal diseases. Difficulties were expected to measure progress. It was, however, "hoped that periodic surveys and the establishment of sentinel health reporting areas would generate adequate information" (cf. project paper). These would provide reliable estimates of disease specific mortality rates in the under five population and case fatality rates from diarrheal diseases in health facilities. As we have seen previously, the vital statistics and health information systems have broken down at the national level. No epidemiological sentinel system has been established to date, and periodic surveys have not been carried out. Record keeping procedures in health facilities are, on the whole, unreliable. Unless the issue of providing effective indicators is addressed, it is unlikely that any project impact
can be assessed. Partial estimates at best could be made if specific health facilities are identified as being able to provide adequate record keeping. The operational research component of the program should focus on how best to address this problem; good "proxies" would be better than no reliable country wide data; a country wide data collection system realistically will take more time to establish.
III. ORT PROJECT - GENERAL CONSIDERATIONS AND PERSPECTIVES

A. GENERAL POLICY ISSUES

The MOH, and in particular the Health Planning Unit (HPU), are presently in the process of elaborating a comprehensive health policy. This ambitious program is the responsibility of a high-level interministerial task force. Health planners, coordinated by Dr. Bennett (UNICEF regional advisor working on a consultancy basis), work as advisors to that commission. This process should be completed in the next few months and will provide a consistent framework for the different programs. It will also clarify a lot of grey areas and thus allow government policies to be translated into effective management procedures, which will simplify the task of program managers and facilitate coordination.

It is obvious at present that the most successful activities of the MOH are carried out by vertical programs such as UNEPI or EDMP, heavily funded by external donors. This approach, wholly justified in an emergency situation where quick results are essential in priority areas, is not viable as a long-term solution for the country. We have seen that the major drawbacks in the CDD program could be corrected by effective management and supervision.

However, we do not believe increasing staff and buying new vehicles for the CDD programs is the solution. Since all programs face the same problems, it would be preferable to pool resources and avoid duplication. Integration has already been achieved at the training level between CDD, UNEPI and EDMP. This process should be extended progressively in all the areas of commonality.

This alludes to another notion, that of decentralization. Health Services until the 1970s were decentralized since the Ministry of Local Government (MLG) was effectively funding and managing all government health facilities at district level. We were told that outside Entebbe people do not "think vertical" any more but see the health program as an integrated whole. The closer to the periphery, and even more so to the community, the more global is the approach. At village level, intersectoral coordination is the normal way of life. This is slowly starting at district level with the monthly meetings of NGOs and local Government staff originally set up to accelerate immunization but dealing now with a variety of health-related issues. Integration and intersectoral coordination will be much more difficult to implement effectively at the central level where the staff concerned cannot even find the time to meet and are too involved in their everyday responsibilities to take the necessary distance.
It is not clear at this stage whether or not the MOH will apply the officially adopted policy of establishing an intermediate regional level between Entebbe and the districts. The four original regions were increased to ten, but the budget allocated to them is little more than symbolic and does not allow them to operate, let alone to be respected. Operational staff are increasingly convinced that this intermediate link is essential to appropriate management, and the UNEPI program is reviving at least the four initial regions in order to consolidate their infrastructure. We believe that unless the government decides to modify its policy in that respect, the CDD program should contribute to this move.

The essential issue for any program that wishes to extend its coverage is to have functional peripheral units. Due to the problems faced in the last 15 years, it is increasingly difficult to distinguish the official level of the health pyramid: none of the health centers visited by the investigators functioned as health centers since they had no mattresses because of looting. A first step would be to make an inventory of existing health facilities (government and NGOs) and their capacities and associate it with local demographic and administrative data. It would then be possible to obtain a realistic definition of the different levels (if justified) of health facilities and of the role or activities they have to carry out. This would provide the basis to establish job descriptions, lists of equipment, and supplies needed for each type of health unit. Management procedures (including supervision, management and health information systems) could then be standardized. We would recommend this process be initiated on a trial basis in a pilot district as part of the operations research component of the project. This should be done in connection with the Health Planning Unit and the Health Policy Commission.

At present, the Northern part of the country is not accessible on a regular basis due to the military conflicts in that area. Donors should keep in mind that country wide programs can at best attempt to cover the population in stable and secure areas. Further extension should be considered if the situation improves, and flexibility is essential for a realistic approach.

B. ORT PROJECT PHASE II: SUGGESTED STRATEGIES

1. Within the Health Care Delivery System

   a. Articulation with Primary Health Care

   As has been previously discussed, Phase I of the CDD program focused primarily on the promotion of ORT using the existing health care delivery system. Phase II is intended to extend its reach out from the health facilities and into the community. One means of doing this is via Primary Health Care (PHC) projects.
In 1982, a National Plan of Action on PHC was drafted by the Nutrition Unit in Makerere University. In 1983, the government officially adopted Primary Health Care as a policy. Updating of the initial plan was postponed because of political unrest until recently. The new government has constantly been emphasizing community participation in development and welfare activities. The creation of the Resistance Committees as a political and organizational structure should provide a strong foundation on which to build viable PHC programs.

On October 1986 the newly formed Community Based Health Care Association (CBHC), including representatives from the MOH, NGO's and UNICEF, held its first Annual General Meeting to formulate guidelines and policies for Uganda's PHC program. Part of the function of this Association is to coordinate and standardize PHC activities currently happening in the field.

PHC is not a new concept in Uganda. At present, there are over 70 different NGO run PHC programs scattered around the country. Each program defines its own parameters concerning the number of families served by a Community Health Worker (CHW), the orientation and level of responsibility of the CHWs, and whether or not they dispense medication. Although there is a standardized program of Training of Trainers, supervised by the training officer of the CBHC Association, the actual training of CHW vary in form, duration, and content from project to project. All of them include ORT in some form or another.

This situation provides the CDD program with a unique opportunity for analyzing, evaluating, and testing (operations research component) different methods of reaching the community via the CHW. Because CHWs are the closest link with the direct utilizers of ORT, mothers of young children, PHC provides the most community specific means for getting the message through to the consumer.

b. Involvement of Other Health Care Providers

To extend coverage and increase acceptability, ORS/ORT should be promoted and channeled through every possible avenue. Health care seeking practices are by no means limited to government and NGO health care facilities. Self medication, purchasing from pharmacies, private medical and paramedical practitioners and traditional healers play a major role in the provision of health care in Uganda. As such it is essential they should be considered and involved in training and ORS supply activities.

Provided adequate training were made available for staff, ORS packets could easily be marketed through pharmacies and private clinics. If packets could be labelled with or include easy to follow (pictoral) instruction for preparation and administration, they could also be marketed at corner shops. As mentioned earlier in this report, traditional healers represent a major
portion of the health care sector, even more so since the decline of government medical services. An Association of Traditional Healers has been formed, and traditional healers are supposed to register with the Ministry of Culture. However, it does not seem there is to date any formal coordinating body operating. It is strongly recommended that traditional healers be contacted and, if willing to do so, be trained and encouraged to add ORT to their arsenal of treatments.

2. Alternative Communications Networks

One emphasis of Phase II will be to develop a health communication methodology linking together a multitude of media and programs, existing and planned.

a. Primary School Health Program

One important vehicle already in the pre-implementation phase is the revised Primary School Health Program. The Primary School curricula for forms P1-P7 have been redesigned to include an examinable subject entitled "Science for Health." To demonstrate the importance of this topic, it can comprise up to 25% of the exams at the end of of P7.

The teacher's syllabus for this program is currently being reviewed and reworked by the Ministry of Education and the National Curriculum Development Committee. The current strategy will be to incorporate the new topics into the established syllabus, then into a formalized Teacher's Guide. It is hoped that this will be accomplished by April so a workshop can be held for trainers of Primary School Teachers, and the program can be introduced to the pupils by the beginning of the second school term, early May.

School Health Kits for this program are being designed in a collaborative effort between the MOH and UNICEF. There are three kits: Water and Sanitation, Immunization, and CDD. The kits contain visual aides, games, stories, and other aides for teaching the appropriate lessons. The kits on Water and Sanitation (which include some information on CDD) and Immunization have been reproduced in small quantities (1000 copies) for trial's sake; the CDD kits are not yet ready for printing.

b. Mass Media Programming

The coordination and scheduling of service and educational activities in the start-up phase of CDD Programs has been of great concern to many countries. The use of mass media for public education is often scheduled before the service system is ready to meet the swift rise in demand that a mass communication program can bring. This is a potential pitfall for Uganda, given the current difficulties in distribution and management of ORS supplies. However, given that these issues are being addressed by the CDD management, and that one of the major emphasis of an
educational campaign will be home-based solutions, it is our recommendation that the CDD program begin careful planning of a mass education campaign.

This campaign should be multidisciplinary in its approach, using methods which can reinforce each other.

Although radios are few in the rural areas, most people in each village at least have access to one. Listening rates have not been assessed, but awareness of radio programs seems to be quite high. Current radio programming includes at least one 15 minute health segment played once a week in each of 20 local languages. In theory, these programs are written in English by the MOH and submitted to the Ministry of Information (MOI) for translation and broadcasting. However, due to transport and communication difficulties between Entebbe (MOH) and Kampala (MOI), this is not regularly adhered to. A health educator from MOH has recently been assigned to the Educational Broadcasting Department of the MOI; this may help alleviate the problem. In addition, four staff from the Educational Broadcasting Department recently returned from WHO sponsored PHC broadcasting training in Tanzania and Finland.

Unfortunately, recorded programs cannot be saved for future use due to a lack of magnetic tape; tapes need to be recycled and reused as soon as possible. A mass media campaign would certainly necessitate the purchase of tapes for consistent broadcasting.

Experience in other countries (e.g. The Gambia) has shown that effective mass communication techniques must be complemented by other available media, for instance, print materials. In this case, it is recommended that one component of the methodology be the development of pictorial materials appropriate to the realities of Uganda (or regions therein), and aimed at the non-literate population. These materials could easily be printed at the UNICEF-rehabilitated MOH printing press located in Entebbe (although it appears that, due to the economic situation and foreign exchange rate, it has become cheaper for UNICEF to have their printing done in Kenya).

Any communications strategy must respond to the existing knowledge, attitudes, and practice (KAP) related to diarrhea, among mothers and other primary audiences. This means that an essential preliminary step in the planning of a mass communication program is the implementation of area specific KAP studies (operations research component). It may be suggested for simplicity's sake, taking logistics into account,
that a first KAP study and mini-communications campaign be conducted in a particular existing PHC or other community-based program.

It is our assessment that Uganda has the technical and personnel resources to carry out a mass communications campaign. CDD program management has already demonstrated an interest in the topic and has submitted to UNICEF a proposal outline for mass mobilization, written in conjunction with a qualified staff member of the Nsamizi Institute of Social Development. The program would benefit from short-term technical assistance in the planning and preliminary implementation stages, particularly for the KAP study design and appropriate message selection.

c. Linkages with Other Programs

As has been stated numerous times in this report, CDD can greatly benefit from increased integration and linkage to other programs around the country. This applies particularly to the communication aspect, which can utilize projects directly or indirectly related to health care delivery in order to promote CDD.

An example of this may be found in UNICEF’s integrated project for PHC/Community Development/Rural Water and Sanitation. This project calls for CDD training not only for the Community Health Workers, but also for the community-based pump mechanics who will be largely responsible for the maintenance between clean water and diarrheal disease. This concept was tested successfully in an emergency-response pilot project in the Luwero triangle, a previously troubled area just recently repopulated and rehabilitated.

Uganda is presently receiving aid from a multitude of sources; NGOs are running a variety of projects all over the country. An inventory of these programs should be made in order to see which of them, like the Luwero triangle and Southwest projects, could appropriately integrate a CDD component. An effective communication program, rather than relying solely on the health care delivery system and mass media, should also profit from the possible avenues to the population that these projects can offer.

C. PLANNING FOR THE FUTURE

1. Local Manufacture of ORS

Several feasibility studies have been carried out to date concerning local manufacture of ORS salts. Small private companies have even started producing limited quantities on their own. Although experience to date shows local production cannot be competitive with UNICEF packets in terms of costs, the political decision to initiate it seemed to have been taken by the
government of Uganda. Local production should enable, in the future, progressive savings on foreign exchange and would provide the incentive for increasing commercialization of ORS packets in the country.

Although a lot of attention was paid to technical feasibility in the documents available to the investigators, little information was provided on the economic aspects of the process. At present, the MOH receives free packets from USAID and through the Danish Red Cross. Local production could not function adequately before mid-1988. UNICEF would like USAID to provide ORS until the end of 1988 and to contribute funds to start local manufacture (essentially for equipment). The working understanding is that the government would finance the first year of operations for Uganda Pharmaceuticals Ltd. (UPL), the parastatal organization they selected,* until operating costs could be met by sales profits. UNICEF could supply the foreign exchange for raw materials to be imported in the first years, and USAID would buy the ORS packets from UPL. The purchase agreement would call for progressive phasing out over five years and handing over the financial responsibility to the MOH. The feasibility of this process obviously depends on future economic reforms and recovery, and political commitment. To date adequate financing of counterpart funds has not been carried out, and although phasing out of external aid is included in all programs, it appears unrealistic in the short term.

The GOU's selection of UPL apparently does not preclude any private company's involvement if the latter can provide necessary funding. UPL can sell to the private sector, which would prevent breakdowns in supply in case the government could not face their obligations; and this could be an incentive for more active commercialization.

2. **Sustainability of ORT Project**

As always, the problem of sustainability of a program is essentially that of recurring costs. Integrating CDD management with other MCH activities will contribute to minimizing those costs and including them for the most part in the normal budget for running health units and supporting community based activities. This budget is officially the responsibility of the Ministry of Local Government, which finances it out of the local tax base. At present, due to the economic collapse and general

* UPL already has the physical infrastructure and a country wide distribution network.

28
mismanagement of funds at district level, district administration is being subsidized by the central government. The MOH is paying for salaries of district health team staff, and supplying essential drugs and donor funds for fuel and staff allowances in order to keep health facilities running. In theory, this is to be reimbursed by MLG, but the feasibility of this is questionable at present. Until the DMO has some say, knowledge and control of the budget allocated by MLG to health services, any effective sustainable long term health program will be difficult to achieve. We understand the issue of MOH-MLG respective responsibilities at district level is being addressed by the health policy commission, which will considerably clarify the situation and future projects.

In the early 1970s, the budget for health was 22% of the country’s GDP. This percentage has fallen to 6% of the present GDP. Population has increased by 40%. A new emphasis has been put in the health policies on extension of coverage and preventive health care. The question is whether free medical services for all is still a realistic policy. Most countries in Africa are facing a similar problem. Governments cannot afford the recurrent funds needed for a smooth delivery of free services and health facilities -- in particular in the rural areas (which are often the most needy) -- and cannot provide effective basic health care. The reality in Uganda today seems to be that most people pay for health care, whether traditional healers, or even in some cases at government facilities. If Primary Health Care is promoted country wide, this problem will become even more crucial.

The MOH to date has not changed the official policy, but it seems that suitable systems of cost recovery taking into account the financial resources of beneficiaries, are being considered. However, it appears no official decision is to be made until the World Bank country study presently underway is completed. The problem is to achieve an acceptable mix of MOH, MLG, community and individual contributions to finance commonly adopted health priorities. Existing cost recovery systems (in particular NGOs) should be analyzed under the operations research component. If people were willing to pay for ORS packets at a reasonable price, the funds saved by the government could be redistributed towards more effective supervision, promotion and training activities (for instance), and the ORT program could extend its coverage faster and further.

3. **Timeframe for Donor Involvement**

During our stay in Uganda, we were regularly told “This is a problem but the real problem is” -- the economic situation, the 20-40% per month inflation, official foreign exchange rate at 1/10 of black market rate, the fact that government salaries bear no relation to the cost of living (which means staff are carrying out two or three jobs and are not available in their offices when needed, that allowances are required if any activity is to be done, etc., etc.)
This situation can be dealt with in two ways:

0 Most donors, for obvious reasons, will tend to adopt what they see as a "pragmatic" approach: priority is given to programmatic efficiency and the obtention of short-term measurable results. To achieve this, the most effective means is to provide financial incentives to counterpart staff so that they will put in the working time needed, allowances to operational staff to carry out any activity from training to routine supervision, and, in general, compensate the government's present financing weakness in the specific program the donor is funding;

0 A more "developmental" approach is more likely to have positive long-term effects. Programs are designed and scheduled according to the country's capacities and concentrate on institution building. Activities are planned according to the actual time staff can reasonably be expected to be at work; emphasis is put on decentralized and self-reliant activities so that NGOs and community participation can complement government's services.

Obviously, things are not simple, and some compromise has to be made on the part of the donors. This compromise should be made together with the government, and long-term implications carefully weighed. In the context of Uganda, it seems, however, advisable for donors to adapt timeframes to the reality of the country. Especially if one does not want artificially successful programs either to go on endlessly on external support or to disappear, impairing for years to come whatever credibility or enthusiasm had been generated and leaving behind unfulfilled expectations.

D. CDD: A GLOBAL APPROACH

The four strategies listed in the Uganda CDD program include ORT, MCH practices, epidemic investigation and control, and environmental sanitation measures. Although the present evaluation focused on ORT, we would, however, like to express some general considerations on the other three strategies.

The Maternal and Child Health activities originally specified include promotion of growth monitoring, breastfeeding, immunization and family planning. The Child Survival strategy recommended by USAID worldwide includes ORT, immunization and birth spacing. In Africa, it is recommended that the policy should be adapted to the local conditions; in Uganda, special emphasis should thus be put on parasitic and other major diseases (in particular malaria, but also schistosomiasis and AIDS).
nutrition and early warning systems, and on training of management, program planning and service delivery personnel (see C.S.A.P. Africa Bureau, November 1986).

Immunization is presently being implemented by the UNEPI program (MOH, UNICEF, Save The Children Fund, U.K.). The provision of essential drugs including chloroquine, to health units is the responsibility of the EDMP (MOH, DANIDA, Danish Red Cross). We have repeatedly insisted on the need for increased integration of CDD with these two programs. Nutrition problems in Uganda are not due in general to lack of food, but to disruption of production and marketing linked to political and economic problems, to social factors (e.g., broken marriages) and inappropriate cultural practices. Growth monitoring is officially a standard policy in Uganda. An efficient early warning system to prevent disasters like the Karamoja Famine in 1980 should be part of an epidemiological sentinel system, the establishment of which is crucial for most disease control programs. Given the essential role that feeding habits play in diarrheal disease prevention and case management, KAP studies and health education activities of the Nutrition and the CDD programs should be integrated. Birth spacing issues are being addressed by a specific USAID project. In-service training of staff at different levels is being considered by different programs (UNEPI CDD EDMP in particular) and should be pursued.

1. Epidemiology Investigation and Control

Outbreaks of diarrheal diseases are extremely frequent in Uganda. (At the time of writing, there was an epidemic of cholera in Kampala.) To date, the only epidemiologists in Uganda work in the Institute of Public Health (IPH) in Makerere University. In case of outbreaks, they are approached either directly or by the ADMS Public Health. We would recommend the CDD management reinforce links with the IPH and contribute to strengthen existing operating structures rather than start an independent unit.

It appears that three epidemiologists are planning to arrive soon to reinforce the MOH in that much needed field. Here again, CDD management should be informed of and be actively involved in the design of MOH epidemiological activities.

Contingency plans for diarrheal disease outbreaks should include the storage of emergency stocks of ORS at CMS and DMS levels. The need for an epidemiological sentinel system is once again obvious if early warning and timely action are expected.

2. Environmental Sanitation Measures

We were told several times on our field trips: "ORT? No problem. The real problem is the lack of clean water. What can you do about it?" In several areas, diarrhea is a year round problem. The rainy season brings the usual surge in diarrhea due to
washed out dirt flowing into unprotected water sources (in particular wells); but during the dry season, accessibility becomes a problem with the quality of remaining water sources poor.

In the early 1970s, Uganda had quite an adequate water supply and sanitation system, and proper maintenance was enforced by law (supervision was carried out by local chiefs who levied fines). Boreholes and protected springs provided adequate water supply (quality and quantity). At present, due to the demographic increase and population migration, the previous infrastructure is no longer adequate. Also, the complete breakdown in maintenance and supervision system due to political disturbances and economic collapse resulted in 2/3 of the boreholes being unusable.

Pit latrines were widespread in the early 1970s, but due to the same reasons, environmental sanitation has become a major public health problem.

An effective program of water supply, sanitation and health education, based on community participation, would be the most effective way to decrease diarrhea morbidity in Uganda. It is a crucial need, both at the village and government level. Furthermore, we believe that the impact of present donor involvement in ORT would be considerably increased if such a program was carried out in coordination.
IV. CONCLUSIONS AND RECOMMENDATIONS

0 The Uganda CDD program was initiated in 1984 by the MOH with the technical assistance of UNICEF; USAID is responsible for the procurement of ORS packets and has allocated funds for training and operations research activities. In general, this program has been suffering from Uganda's political and economic turmoil.

0 Procurement and delivery of ORS packets have been sporadic and unreliable due to a variety of reasons.

0 It is strongly recommended that a citrate formula ORS be purchased and a system be created for reliable delivery on a timely basis.

0 In-country storage, distribution, and management procedures should be integrated with other existing programs (immunization, essential drugs) to avoid duplication of vertical programs and waste of scarce resources.

0 ORT Units have been set up around the country; however, their functions need to be redefined and procedures clarified. If additional units are to be established, more time and attention must be paid to initial staff training. Follow-up and supervision are essential.

0 Training and promotional activities have been successful, on the whole, in terms of timeframe, numbers of people trained, and integration with other programs. Some system of evaluation and follow-up should be instituted, preferably concerning the operational-level training in order to improve design and adapt to change. Training is becoming increasingly problematic because of cost; alternate solutions to the present system must be pursued.

0 Health education materials are acceptable but limited in both their messages and intended audience. Pictorial materials should be developed in tandem with other communication efforts aimed at the non-literate population. With regard to the Primary School Programs, 25% of the primary school exam at the end of Form P7 will be related to health.

0 Health workers training curricula demonstrate a glaring lack in effective CDD/ORT teaching, which partially explains the lack of commitment to ORT on the part of medical and paramedical personnel in the field.
The new curricula will emphasize ORT more strongly; the medical doctors curriculum should also be revised with more emphasis on ORT. In addition, training should be held for tutors (especially of pediatrics) in the health workers training institutions, to increase commitment and ensure uniformity of information.

The operations research component is seen as a weakness of the CDD program. We recommend short-term technical assistance in Uganda to appropriate operational research topics and techniques and draw up a detailed plan of action closely integrated into the overall CDD program management.

ORS packets seem to be relatively well accepted and well utilized when available. However, given the political and economic realities in Uganda, it is recommended that alternative home-based solutions (made with acceptable and locally available materials) be researched and promoted.

At present there is no information on which to base future assessments of the CDD project impact. We recommend that the project consider aiding the MOH in its endeavor to design and implement integrated wealth management and information systems together with an epidemiologic sentinel system.

As a further essential aid to program management, improved dialogue and communication must be encouraged between donor agencies and the CDD managers. The national CDD subcommittee should recommend meeting on a quarterly basis. We would also recommend that program staff include a managerial expert to institute and oversee badly needed systems. Regular operational meetings should be reconvened by management of EPI, CDD and EDMP.

The MOH/UNICEF SOUTHWEST Project will provide an opportunity to examine management, particularly at the community level, of all levels of health care. CDD program management should work very closely with this activity in its implementation.

In order for Phase II of CDD to effectively reach beyond health care facilities, we recommend a close articulation with Primary Health Care Programs, both present and planned. Other avenues to be explored include existing parallel health delivery systems.

Alternative communications networks are crucial to Phase II. A mass communication program linking mass media, pictoral print, and other available education methods should be planned and implemented, preceded by
careful KAP studies. We recommend technical assistance in the KAP studies, planning and preliminary implementation stages of this program. This capacity may be provided by two other activities, EPI and AIDS control.

- Local manufacture of ORS has been recommended by the GOU. More attention should be paid to the economic implications of the alternative selected as a basis for an appropriate production and marketing policy for ORS in Uganda.

- In addition to the existing free distribution of ORS, the commercial sale of ORS should be initiated.