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ZAMBIA REVIEW

A Report Prepared By PRITECH Consultants:

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Zambia Review

Background

In July 1986 AID/W approved the PRITECH Zambia intervention proposal which listed estimated inputs and outputs in ORS production, distribution, program management, training and education, supervision, evaluation and technical assistance.

The PRITECH Representative, Paul Freund, started work September 1, 1986 and the PRITECH office was established in Lusaka.

In May 1987 PRITECH fielded a three person team -- Dr. Roy Brown, Peter Spain, and Jane Brown -- to assess the general situation of the CDD program in Zambia and to identify areas where PRITECH could provide assistance. It was concluded that there was a need for PRITECH to provide technical assistance in the areas of training and social marketing.

1. Description of the Health System

Health services in Zambia are delivered by four major institutions: the Ministry of Health; the Church Medical Association of Zambia (CMAZ), i.e., the missions; the mining companies in the copper areas; and the military. A fifth sector for health-care provision is the traditional healers. And a small but growing urban phenomenon is the private surgeries that provide Western medicine. One Zambian in four lives beyond the reach of any provider of Western medicine.

The nation is made up of nine provinces and 57 districts within those provinces. The MOH health system is built around medical officers for each province (PMOs) and for each district (DMOs), with hospitals at province and district centers and 845 rural health centers answering to the district medical officers. Because 60% of their budgets come from the MOH, CMAZ personnel and facilities are integrated into the MOH and follow MOH policies. Most missions also have resources of their own, well beyond their government subsidy, giving them a definite advantage over medical facilities funded only by the government.

PMOs and DMOs are physicians. While each of the nine PMOs is a Zambian, only one of the DMOs is a Zambian. Indians, Egyptians, Dutch, Cubans, Irish - a myriad of expatriates serve in this key health management position. Accordingly, physicians' training has been diverse; Zambian doctors themselves may have been trained locally or in any of several Western or Asian countries.

Expatriate doctors have been, for a long time, the backbone of the Zambian health system. While their importance remains (for example, DMOs), the weakening Zambian economy has prompted significant numbers of these physicians to leave Zambia, either for other African countries (including the South African homelands) or

for their home countries. To replace these expatriates, Zambia is not able to train enough doctors, so Zambian clinical officers (with three years' training) are being thrust into the breach. Government facilities are overburdened and under-staffed, and this leads to additional loss of physicians as government doctors, Zambian and expatriate, set up their own clinics in urban areas (where half of all Zambians live) to cater to patients unwilling to suffer the long queues and a declining service of MOH facilities. While government clinics are free and private clinics charge fees, the difference in services makes a growing number of patients willing to pay for medical service. Drugs and some hospital costs, however, are to be purchased by the patient.

Mines

The privately owned mining companies of the copperbelt provide medical care for their employees and employees' dependents. There are approximately 250,000 mining employees making up perhaps one million recipients of mining company health care, or one in seven Zambians.

The mines have foreign exchange and are able to import drugs freely. However, both General Pharmaceuticals Limited (GPL) and Inter-Chem have supplied the mines with locally produced ORS packets.

It seems the mining companies operate privately and are not readily accessible or open to outside medical advice and information. However, since it is known that company health services are already using ORS it seems likely that they would distribute the ORS leaflet if these were sent to them.

Military

The GOZ military has its own health services quite separately operated and financed from the MOH. This is not a central or regional service but small mobile units around the country; in order to prevent a concentration of military in Zambia, these forces are scattered in small groups throughout the country serviced by mobile medical units. It is known that some military hospitals are using ORS.

CDD Program: organization

The Zambia CDD program at the MOH/Lusaka comprises:

1. Dr. H.B. Himonga, MOH CDD Program Manager, who is also EPI Program Manager
2. Mary Kaoma, Public Health Nurse
3. Annie Mupinde, Public Health Nurse.

Also WHO has contributed an associate expert, Dr. S. Salmonson, a physician from Sweden, who is also responsible for FPI activities.

The CDD program follows the implementation plan developed in 1986, which was agreed upon by the National CDD Committee (which includes MOH, WHO, PRITECH, and UNICEF).

The MOH is planning to add at least another nurse to the program in the near future, in anticipation of the departure of Dr. Salmonson in September this year. At this time it is not known when WHO will replace Dr. Salmonson.

Dr. Salmonson plays a very useful and important role in the CDD program and has firmly established himself in the MOH. The MOH CDD staff is small and over-extended, especially in view of Dr. Himonga's dual responsibilities to CDD and FPI. The Zambian MOH has launched a large ambitious national CDD program assisted and encouraged by WHO. (WHO has provided the Associate Expert, funds for the UTH ORT Training unit, expert assistance with the baseline survey, training, etc.) but the PRITECH team is concerned that the departure of the WHO Associate Expert will inevitably deplete the program significantly. We believe that the presence of the WHO Associate Expert played a large role in getting the Zambia CDD Program underway and without his expertise and energy there is a danger the program may lose momentum and focus.

PRITECH offered to fund the extension of Dr. Salmonson's present contract through WHO but was advised that no such mechanism exists in WHO for such an arrangement between WHO and an AID contractor. However, PRITECH will pursue this to see if such an arrangement could be created for the future in Zambia and other countries. In addition PRITECH is hoping to employ Dr. Salmonson for three to six months as a consultant in Zambia early 1988. We believe that Dr. Salmonson will make an important and necessary contribution in particular to the progress of the UTH ORT training unit, which will be open by then, and subsequent training courses at the unit. WHO contributed funds for the renovation of the UTH for the purpose of developing a sub-regional training center in Africa and we question how this will happen without WHO on-the-spot expertise and energy.

Action

We recommend (1) that WHO is asked to fill the Associate Expert position in Zambia as soon as possible after Dr. Salmonson's departure; and (2) that PRITECH and WHO examine possible ways for AID to fund a full-time WHO position in Zambia perhaps by PRITECH giving CDD/WHO extra budgetary funds.

Update

PRITECH checked with Dr. Merson, WHO/Geneva on status of Associate Expert vacancy. The position has been advertised and SIDA is actively recruiting.

2. CDD Policy

While a policy document as such has not been published by the government, the de facto publication of CDD educational materials and training curricula has evolved a set of guidelines closely in accord with WHO guidelines. The MOH has also dropped Kaolin from its essential drug list, and may use the money saved from purchasing Kaolin to purchase oral rehydration salts (ORS).

The MOH has recognized the importance of breastfeeding and of other foods as part of diarrhea case management, acknowledging the dual dangers of dehydration and malnutrition that diarrhea can bring. Documents put out by the Health Education Unit (HEU) of the MOH prescribe only ORT (i.e., ORS plus feeding) for mild and moderate dehydration, but call for immediate use of I.V. fluids for a severely dehydrated child, even a child who can drink. These documents counsel mothers never to use Kaolin or other anti-diarrheals and never to use antibiotics. The HEU notes that antibiotics are indicated rarely for diarrhea, and then only in a health center or hospital.

The government, with help from UNICEF and WHO, has committed itself to building an ORT training unit within the University Teaching Hospital in Lusaka, a facility that will service not only the nation but the sub region as well. Progress on the unit has been slow, not for lack of commitment, but because of administrative delays. The ORT unit will be linked to a recently opened nutrition unit at the UTH, and should be ready in early 1988. Responsibility for training courses will probably fall on two physicians now finishing courses abroad, Dr. Mubita who returns in June 1987 and Dr. Mulenga who returns at the end of 1987. During our visit we stressed the importance of continuity in the management of the UTH ORT unit.

After some periods of ambiguity, the MOH now seems committed to a one-liter packet. Because of the local availability of 750 ml. bottles, a local producer has been producing a 750 ml. packet, called MADZI-A-MOYO ("The Water of Life"). These packets are distributed both through the MOH and CMAZ, as well as being sold at chemists' shops. UNICEF has also brought in some one-liter packets for Government/CMAZ distribution only.

Government documents also promote home-available solutions and home-made sugar-salt solution (SSS) for diarrhea with no dehydration. SSS formulation is described in several ways: a pinch of salt, a scoop of sugar and 250 mls. of water; a teaspoonful of sugar, a little salt at the end of the spoon, and one glass of water; one

level spoon of salt, eight level spoons of sugar, and one liter of water; and in the Community Health Workers' draft handbook, there is given a vague formula (shown only in pictures) of two large spoons, one small spoon, the words "sugar" and "salt" equidistant from the spoons, and a mug of water of unspecified volume. Advice on how much ORS or SSS to give is equally diverse, with some complex descriptions of ml/kg/hr and some calls for giving the child as much as he wishes.

It seems advisable for the MOH to publish a definitive CDD policy, over the signature of Dr. E. Njelesani, the Director of Medical Services. Such a policy should begin with home-available fluids, not only because of the difficulty some mothers have in mixing a safe and effective SSS but also because of uncertain availability of sugar in many parts of the country. SSS, however, should also be recommended according to a uniform formula, preferably a one-liter solution made with one teaspoon of salt and eight teaspoons of sugar. Finally, the one-liter packet should become the keystone of fluid-replacement therapy for dehydration, and be available through public and private channels. To the degree that ORS packets are available for use in the home SSS can be de-emphasized; but until packets are accessible to all homes, research-based health-education efforts promoting SSS seem preferable to no SSS promotion at all.

The medical outlets run by the mines and the military are also promoting ORS and would be strengthened in doing so by a MOH policy statement.

More importantly, the lower-level health workers in the MOH system would be given greater confidence in ORT by such a policy decree. Although some training of those workers has been carried out (cf. the training section below), considerably more is needed and very few physicians or nurses have been trained. So the present situation is one in which often the only trained-in-ORT health worker is a junior person working against the advice of senior nurses or physicians. When training for nurses and physicians is provided by the UTH training unit, that will change - it is hoped. But, as is evident in every setting where ORT is being introduced, prior commitments to diarrhea case management by fasting or anti-diarrheals or antibiotics or I.V. therapy die hard. The encouragement of a clear policy statement will hasten the day when the entire medical corps follows the WHO guidelines for diarrhea therapy.

When this need for an official statement/directive on CDD policy was discussed with the DMS he stated that he believes this should not be done by an order from his office since there is still much resistance to ORT in the medical profession and he believes a slow careful approach using the UTH unit for example is preferable.

3. ORS Production/Supply

There are three sources of supply for ORS in Zambia: UNICEF-donated one-liter packets; packets of 750 ml. MADZI-A-MOYO (Water of Life) produced by General Pharmaceuticals Ltd., a parastatal; and private production of one-liter packets by a commercial company, Inter-Chem which are simply labelled "ORS." The MOH system and missionary hospitals receive their supplies from Central Medical Stores, Lusaka, which is headed by Dr. Chikusu, who is also the MOH's Director of Pharmaceutical Services. At the time of our visit there were no ORS packets in CMS.

Size of Packet

The MOH decided in 1986 on having only the one-liter packet available in Zambia. This entailed a switch from 750 ml. packets to one liter packets for GPL. However, GPL have already produced 600,000 750 ml. packets which are to be used only in health facilities in order to avoid confusion of the public to the extent possible.

UNICEF

UNICEF made the commitment to supply 400,000 sachets of ORS at a cost of \$24,000 in 1987.

Since UNICEF originally supported GPL's local production of ORS it was hoped that this support would continue, but UNICEF's support varies with the fluctuations of the Kwacha. When the kwacha fell to 21 to the U.S. dollar UNICEF agreed to purchase the 300,000 sachets of ORS presently stored at GPL. When the Kwacha rose to 8, mandated by the President Kaunda, UNICEF cancelled the GPL order and is expecting delivery of 400,000 one-liter imported UNIPAC packets. However, it is uncertain when delivery (via Dar es Salaam) will take place. The team pointed out to UNICEF that there are no stocks of ORS at present at Central Medical Stores and that it is most important to restock CMS immediately; thus, if UNICEF supplies are likely to be delayed it is necessary to access other supplies -- the 300,000 750 ml. packets at GPL. This would also solve the problem of clearing GPL of these packets at which time GPL has agreed to start production of one-liter MADZI-A-MOYO packets. Furthermore, there is the desirability of supporting a local production capacity that could be channeled through both public and private outlets and that might eventually export ORS packets to neighboring countries.

The team reminded UNICEF that the GPL is probably willing to lower its selling price on the 300,000 750 ml. packets to 7 cts/sachet which would make the price equal or lower to that of imported UNIPAC packets. UNICEF stated that it was possible that funds could be accessed for such a purchase. UNICEF promised to check if the UNIPAC sachets are delayed.

On its final day in Zambia the team met with the DMS and advised him of the serious situation at CMS. Dr. Njelesani was unaware of the lack of packets at CMS and agreed that this could threaten the entire CDD program. Dr. Njelesani called a meeting for the following day of Dr. Chikusu, Dr. Himonga, Dr. Freund, and Mr. Manyindo of UNICEF to review the situation.

When at WHO/HQ/Geneva the urgent need for packets was discussed as well as the desirability for UNICEF to support local production of MADZI-A-MOYO. Dr. J. Tulloch and Mr. Hans Faust promised to contact UNICEF/New York to urge UNICEF/Zambia to continue assistance to local production.

2. GPL

The GPL presently has a stock of 300,000 750 ml. packets which they required to be purchased before beginning production of one-liter MADZI-A-MOYO packets -- which will be the central theme of the advertising and media campaign.

GPL considers that supplies exceed demand for ORS at this time, but this could change dramatically with the HEU media campaign and as GPL commences commercial advertising and sales of MADZI-A-MOYO. The team emphasized the dangers of a promotional campaign creating public demand when supplies of one-liter MADZI-A-MOYO are not yet available in health facilities. In addition, to promote MADZI-A-MOYO in its 750 ml. form would lead to consumer confusion with the introduction of the one-liter sachet.

It is hoped that GPL will lower the selling price on the 300,000 750 ml. packets in stock so that UNICEF will purchase these and replenish CMS.

At that time production can start on one-liter packets: GPL has sufficient raw materials in stock to make 500,000 one-liter packets (which completes the first million)

All MOH health education materials are focused on MADZI-A-MOYO; it is important for the success of the program that GPL finds it advantageous to continue production.

Update

A meeting was convened in August attended by representatives from WHO, UNICEF, WHO and MOH who discussed the current ORS production status, estimated demands, and projected needs. It was decided to offer the GP three options:

1. GPL to bid for foreign exchange to purchase raw materials from the Bank of Zambia;

2. UNICEF to purchase raw materials on a reimbursable basis;
3. WHO/UNICEF/PRITECH to provide funds for UNICEF to purchase raw materials which would be given to GPL contingent their negotiating a competitive cost per sachet.

At a later meeting between MOH (Dr. Chikusu), UNICEF, (Mr. Manyindo), PRITECH, and Mr. Iluya (GPL) it was decided to choose option (3) at 37 ngwee/packet. Dr. Chinkusu made the commitment that Medical Stores will purchase GPL's production of one-liter ORS packets.

The PRITECH representative states that with UNICEF, PRITECH, and WHO budgeting commitments to local ORS production there should be no problem with availability of packets. The last remaining 200,000 750 ml. packets were shipped out of medical stores in September.

3. Inter-Chem

Inter-Chem is a private producer of one-liter ORS. Presently production has stopped for technical reasons but Inter-Chem plans to resume production using citrate (they have had problems with bicarbonate formula ORS due to humidity during the rainy season). Inter-Chem has a large order from the Mines Hospital Group and it seem could sell 200,00 packets annually to the Mines with no marketing effort. According to Steve Fabricant (who visited Zambia in early April) Inter-Chem perceives a very limited market in rural areas where the MOH supplies ORS packets (GPL and UNICEF) free. Inter-Chem sees the urban areas as their most promising target and would welcome TA in marketing from project SUPPORT of PATH.

The USAID Mission advised Steve Fabricant that the mission would oppose any proliferation of centrally funded projects in Zambia (outside of agriculture) and that any SUPPORT-PATH activities should be channeled through PRITECH.

This seems to offer a good opportunity for coordination of private-public sector advertising activities and encouragement to Inter-Chem would provide a back-up supply of ORS. (Inter-Chem does not have a brand name such as MAZI-A-MOYO, merely ORS).

PRITECH discussed this possibility with Steve Fabricant in Washington and said PATH-SUPPORT should provide PRITECH with a proposal which PRITECH would clear with AID/W and with the MOH/Zambia.

Update

In September R. Fields of PATH visited Zambia under the auspices of PRITECH. It is likely that SUPPORT will have a limited intervention with Inter-Chem providing marketing assistance.

Logistics/Distribution

The economic crisis strikes hard at Zambian logistics. Foreign exchange for fuel and vehicles and spare parts is particularly scarce, and even Kwacha for routine expenses like per diem and health-center maintenance are limited. (E.g., each of the 845 health centers is allocated only 50 Kwacha per year for upkeep of the facility or about U.S. \$6.25 at the current exchange rate).

The parastatal Medical Stores, Ltd. is the distribution channel for MOH drug supplies, including the SIDA health-worker kits. But the Government's ability to pay for MSL's services has been questionable and is becoming more so. The lack of commercial transport and the decreasing ability of the Government to make timely per diem payments compound the matter. GMAZ missionaries are able to provide a vehicle and are more likely to request resupply of their drug stocks when they travel to Lusaka. The GMAZ supplies DMOs for some districts, and can ensure that supplies, including ORS packets, go out to rural health centers and do not become wastefully stockpiled in the district hospital's warehouse.

Seventy percent of the medical supplies for all health institutions in Zambia are provided by Medical Stores Ltd. The balance of 30% is provided by local, private wholesalers through direct imports.

In order to establish the distribution and availability of ORS Dr. P. Freund is conducting three surveys (see attached questionnaires):

1. Health Center Survey - to obtain data on diarrhea treatment regimen and availability and distribution of ORS. This was sent to 200 health centers and there has been a 94% response to date.
2. Private Surgery Survey - to provide data on diarrhea treatment and current use of ORS. Sent to 160 surgeries. Approximately 50% return to date.
3. Dispensaries/Chemists Survey - in urban areas - approximately 150 in total.

Dr. Freund expects to complete his analyses of these survey returns by the end of July, at which time we will have a clearer, more accurate picture of the situation and be in a position to make recommendations to the MOH.

In addition, the MOH is undertaking a series of provincial supervisory tours to: (1) Evaluate the progress of the EPI program in the provinces; (2) a) assess availability and distribution of ORS b) assess attitudes and treatment regimens for diarrhea case management by health center staff at provincial and district levels. All the nine provinces will be visited and in each province at least two districts and two rural health centers will be covered. These teams will include MOH EPI and CDD personnel, Dr. Salmonson of WHO, and Dr. Paul Freund of PRITECH.

These one-week visits started in early May and will continue throughout 1987. See provincial timetable and program attached.

Comment:

The present distribution of ORS from CMS to the health system suffers from:

- 1) Lack of ORS at CMS;
- 2) inadequate facilities for transport throughout system;
- 3) gradually reducing supplies through provincial, district, RHC to CHW which often results in little or no supplies reaching the lowest level.
- 4) stockpiling of supplies at provincial and district levels in knowledge that replenishments arrive on a random basis at best.
- 5) lack of monitoring and inventory management;
- 6) lack of training and materials; and
- 7) lack of supervision.

Now that PRITECH has a vehicle, that vehicle will be used extensively for rural supervision and can carry ORS supplies on those excursions. But neither PRITECH nor the CMAZ nor both can substitute for a functional MOH delivery system and a rural medical corps that will make requests when supplies are low to ensure continuous drug availability.

PRITECH is considering the mails as a channel to reach the health centers with packets. The mails are not swift, but appear to be reliable and national in their coverage.

Update

In September 1987 the MOH requested that PRITECH fund an operational research study to ascertain use and distribution of ORS (see attachment). This study is being undertaken jointly by MOH and PRITECH and has the following objectives:

- 1) to collect information on the use and distribution of ORS in sample areas (Kawambua, Cuadiza, Namwale, Ndda, and Mumbwa) so as to estimate correctly the national requirements;

- 2) to collect information on the actual use of ORS when it is readily available in the sample areas, again with the aim of estimating correctly the national requirements;
- 3) to study the knowledge that mothers who use ORS have;
- 4) to publizise this information for use by the MOH and donor agencies. The timing of the study is September 27 - November 18, 1987.

Other ORS Distribution Channels

1. SIDA

In September 1984 SIDA undertook a study of the Zambian Drug supply system, which found:

"There are serious shortages of essential drugs in the nation's health facilities. Particularly hard hit are Rural Health Centers which provide the front-line for primary health care.

"Reasons identified for these shortages are weaknesses in procurement and supply planning, distribution and transportation, prescription and usage of drugs."

SIDA support to the drug program started in early 1985. A drug kit, comprising 31 different drugs (including one-liter ORS) was composed on the basis of information and the most common diseases treated at the RHC-level. It was calculated that one kit should cover the RHC needs for drugs for 1000 patient first attendances. For Community Health Workers a smaller kit with 10 different drugs was provided.

The SIDA RHC kits, which cost approximately \$250 are imported complete and sealed and are not opened between time of supply and delivery to the RHC.

The kits are delivered to Medical Stores Ltd. for distribution to the districts monthly. At the district-level RHCs and CHWs are furnished with their drug allocation. Each RHC keeps records of drug use which are used by the district health team to monitor usage. One-week training seminars are held at the district levels for the clinical officers in charge of RHCs, who also receive instruction on how to train the CHWs in these areas.

To date, inadequate facilities for transportation from the district to RHC-level has proved the biggest problem in the implementation of the EDP. SIDA has asked the MOH to address the need for an increased allocation of vehicles to the EDP at the district level.

SIDA started the EDP initially in three pilot districts (Choma, Mbala, and Chipata) and has since expanded and is now operating in seven districts. The plan is to expand at a rate of 12 new districts per year and to be a national program covering all 57 districts eventually - certainly by early 1990s.

The team asked for how long SIDA plans to supply essential drugs on this expanded scale; at this time, if the five-year budget to 1991 is approved for national coverage, SIDA does not anticipate any lessening in its effort in Zambia.

PRITECH also asked about the possible inclusion by SIDA of locally produced ORS in the ED kits. SIDA is presently importing the entire kits. However, in some other national programs it seems there are international kits and domestic kits, the latter utilizing locally produced drugs, and this might be a future consideration for SIDA in Zambia.

5. Management and Training

The MOH's appointment of Dr. Himonga and nurses Kaoma and Mupinde to the CDD program reflects a strong commitment by the DMS. The presence of the WHO associate expert has been another driving force behind the program. The PRITECH representative has been particularly fortunate to have this core team of counterparts.

As for training, so far there has been little clinical training for doctors and nurses. The installation of the ORT unit at UTH is meant to remedy this. What training has been done at the provincial and district level has been mainly the WHO Supervisory Skills course for people in the primary health care system, not for people who work in clinics. Provincial CDD managers appointed by Dr. Himonga have typically been public-health nurses or health inspectors, rather than nurses or clinical officers. So clinical staff training is really yet to begin in Zambia, though this lack is recognized and is being addressed, beginning with the UTH unit.

Summary of Persons Trained in CDD Courses, Zambia

1. Program Management

Mr. F.K. Mambwe	1980 Thailand
Dr. W.M. Lungu	1980 Thailand
Dr. C.B. Chimbini	1981 USSR
Ms. S.S. Lorah	1982 U.K.
Mrs. M. Mufwaya	1983 Zimbabwe
Mr. B. Michelo	1983 Zimbabwe
Dr. H.B. Himonga	1986 India

Of these only two are actively involved in the CDD program.

2. Supervisory Skills Mid-Level Manager Courses
As of date 257 facilitators trained in Zambia since 1984.
3. Revised Supervisory Skills Courses for District and Health Centre Staff. As of date 906 health workers have been trained. During 1986 each of the nine Provinces conducted two courses for approximately 30 participants each. During 1987 the target has been to run one course, for 30-35 participants in each Province.
4. Clinical Management Courses

Total person trained since 1985 = 4

Dr. K. Mukelabai - Alexandria 1985
 Dr. H. Mulenga - Addis Abada 1985
 Dr. Mubita - Bangla Desh 1986
 Mrs. Hangala - Bangla Desh 1986

The existing rehydration unit at UTH does not currently follow WHO guidelines for diarrhea case management. For example, at the present time, as noted during a cursory evaluation of the AO-6 Rehydration Unit, the Russian-trained physician-intern is routinely prescribing the following medications for all patients:

- a. Phenergan, which is used as a sedative, supposedly to prevent vomiting, but which in fact makes all of the infants and children sleepy and often too tired to suckle and accept ORS. The children are given this for vomiting whether they are vomiting or not. Phenergan, was on every chart in a district hospital's rehydration ward as well.
- b. An intramuscular injection of an antibiotic, given despite the fact that fewer than 1 out of 5 cases of diarrhea in Zambia is due to infection; this is very expensive. Injections began to be given after the pharmacy ran out of oral antibiotics;
- c. ORS.

The problem with Standing Orders is that UTH is going to be the reference rehydration unit for Zambia and there must be better organization of the training course for case management. With WHO sponsorship of the UTH unit, WHO CDD guidelines should be closely followed.

The use of ORS should be standardized in preparation, application, and usage:

- a. ORS should be prepared in an uniform fashion and, if available, should be started in the home at the first sign of diarrhea; standard instructions on SS and home-available fluids should be established also.

- b. ORS is being provided at some hospitals and it is presumed that it is part of the basic instructions, to be given at stated intervals, such as every two or every three hours, rather than in frequent small sips or teaspoonsful by the mother.
- c. ORS must be provided in conjunction with continued feedings, both breastfeeding and other foods; we noted both at the UTH Rehydration Unit and in other hospital and clinic centers that the idea of "resting the gut" is pervasive -- this should be discouraged.
- d. There must be an awareness that ORS is a replacement for lost essential body fluids and minerals, that is for rehydration purposes and not for stopping the diarrhea.
- e. ORS is not designed to be a substitute for feeding as we heard in one of the hospitals; we must emphasize that malnourished children are at high risk of dying due to associated dehydration, making food absolutely essential.
- f. Possibility of providing flavoring for ORS packets should be re-explored, despite the WHO feeling contrary to this approach; the reason is that mothers tend to taste things given to their infants and find that ORS as prepared using the packet is not particularly tasty; this would not necessarily represent a significant increase in cost of ORS packets, and for Zambian mothers this may be necessary for compliance.

Clarification must be provided in the training of the definition of diarrhea. Diarrhea is not simply "frequent stools", since the normal stools of a healthy breastfeeding infant can be both frequent and loose. The use of the term "diarrhea" must include watery stools and if the mothers come in with the chief complaint that her child is having "diarrhea" there must be a further probing question, asking the mother to describe the character and description of the stools, along with the frequency in 24 hours.

As mentioned earlier, with the reduction of the number of expatriate doctors in Zambia and the lack of Zambian doctors to replace them, more and more clinical officers are being given increasing responsibility. Clinical officers and health assistants are trained at the Chainama College of Health Sciences, in a three-year program. The college is beset by a number of very serious problems, and is very likely turning out clinical officers who are inadequately trained.

For example,

- there is serious and chronic absenteeism by both faculty and students at Chainama, with no sanctions;
- the college curriculum is not reviewed by independent reviewers;

- independent examiners do not design tests to fit the curriculum, and often fail to reflect the Zambian reality in their examinations;
- examinations do not have any questions on pediatrics;
- the curriculum has no learning objectives.

Once enrolled, students at Chainama are assured of graduation - attendance and examinations have little bearing on the matter. There is no supervised clinical work or "internship" for clinical officers, following their graduation or prior to their assignment to a rural health center. Internship at the district hospital responsible for that RHC may be a useful addition to their training - as suggested by one DMO.

While consultants from outside Zambia (e.g., AMREF in Nairobi) or even from the UTH might provide some assistance with curriculum and management at Chainama, until the atmosphere of the college is tightened and serious application by teachers and students is demanded, the lack of professional standards at Chainama -- which is now responsible for the principal body of clinicians in Zambia -- will translate into a reduced level of clinical service throughout the country.

Yoked to Chainama College are several Teaching Health Centers, designed as sites for giving clinical experience to Chainama trainees. According to Chainama staff, these centers also need an overhaul, in both treatment and training practices.

The lack of a defined CDD policy also reverberates through the Chainama College. Lecturers from the MOH have recently given presentations on CDD that were considerably at variance with WHO guidelines or even with the informal guidelines found in some MOH documents.

In sum, doctors at the UTH and elsewhere need training and information about ORT. The UTH unit is seen as a major step to fill this need. At Chainama College of Health Sciences, the clinical officers and health assistants in training there need:

- o improved courses, with tighter academic standards
- o improved clinical experience
- o better evaluation and testing, geared to an improved curriculum
- o six months of supervised clinical work after graduation at a district hospital before their posting to an RHC within that district

Recommendations

The MOH has developed the 1988/89 training program (see attached) which will require WHO and PRITECH to provide technical assistance, lecturers, and facilities for the proposed programme managers course and the clinical management training courses.

The MOH proposal for clinical training includes an intercountry course to run 2-3 weeks at which 25 people would be trained at the ORT Unit/UTH and two national courses to train 25 people including hospitals, private physicians and pediatric nurses at the ORT Unit/UTH. Since progress on the ORT unit has been slow and it is not expected that this will open until May 1988 it is recommended that a national clinical management training course be undertaken in the meanwhile in Zambia. PRITECH recommends that Dr. R. Brown visits Zambia to discuss this proposal with the MOH and the UTH. In addition, PRITECH will ask WHO to participate in this undertaking. Dr. Salmonsson, WHO Associate Expert, will be in Geneva later in September and it is expected that he will discuss the Zambia training needs with WHO/CDD.

6. Education/Communication

The Health Education Unit of the MOH has in the past developed a schedule for materials development and production. But, like their colleagues in so many other countries, the HEU team in Zambia serves many masters and many agendas. Their initial plan for CDD materials was set back by a month-long training course in Nairobi and an urgent request from the Ministry to develop a poster on AIDS. During the week of the PRITECH review, a week-long seminar sponsored by the World Bank to develop artwork for population programs precluded any substantive discussions with the PRITECH team.

In addition to these distractions, the orientation of the HEU is a traditional one: reactive to crises, not given to systematic pretesting or post-testing, disciples of the "bullet theory" of communications that equates media coverage with audience effects, conservative in terms of their position vis-a-vis expatriate consultants, and working within a ministry that makes no non-traditional demands.

This being the situation, PRITECH is seeking to work with the HEU in a parallel fashion that does not make production of CDD materials vulnerable to the vagaries of the HEU. A Health Education Committee has been formed, at PRITECH's initiative, to be the gatekeeper for materials - that is, the Committee approves or disapproves draft materials developed by Committee members. Members are drawn not only from the HEU, but from WHO, UNICEF, the Zambian Broadcasting System, UTH, MOH units such as Nutrition, PHC, and CDD; SIDA; and PRITECH. PRITECH has the flexibility to develop certain materials in draft form and, if the drafts are approved by the Committee, PRITECH can carry the job through to the production phase. All materials produced are emblazoned with the MOH HEU logo, with PRITECH

These tours represent a major, but obviously limited, effort at support mentioned below that. This arrangement deftly builds on the role of the HEU as a materials-production unit, while recognizing and bypassing the limitations of the HEU. PRITECH has sought to strengthen the HEU, as for example by supplying a 35 mm camera for use by the HEU photographer.

The Health Education Unit financed by SIDA produces a monthly newsletter on health matters; called Bwino or "Good Health." One issue has been done on diarrhea and nutrition, another on diarrhea alone. Our review of these publications indicates some areas for improvement and clarification - e.g., premature use of I.V. therapy, how to give ORS, etc.

The HEU and the Committee are committed to producing a broad array of educational materials in support of CDD:

1. Flyers. For rural health workers and mothers. To promote MADZI-A-MOYO and the other elements of ORT, as well as diarrhea prevention. Initial run of 100,000 to be in English, with the later runs in local languages. PRITECH draft is ready for Committee review and pretesting.
2. Posters. For rural health centers, schools, and other public places - 5000 for each of the nine provinces. English and local languages. In revision by PRITECH-hired local artist.
3. WHO CDD Advisory Card. Small card produced at WHO/HQ in Geneva, now being adapted and translated into local languages by HEU. For mothers, describing first steps of ORT at home, using home-available fluids.
4. Booklets. A more detailed description of ORT for health workers and literate mothers. Possibly on the model of Botswana with both English and local languages on alternate pages. Over one million women are literate.
5. Flip Charts. These will be teaching aids for health workers, with text printed on the back of each page in English and local languages. The 3500 community health workers are the principal targets for the flip charts, as well as all provincial and district health educators, for use during ante-natal clinics.
6. One of the two main Lusaka English-language newspapers, the Daily Mail, has just offered free to the HEU one-quarter of a page every week. To buy a quarter page costs X 1500. How the HEU uses this space remains to be seen. Our recommendation is for plenty of graphics, drawing from material in the flyers, posters, and flip charts, to establish brand identification of MADZI-A-MOYO. The HEU will use the space for non-CDD material too.

7. Radio. The tendency on both radio and television is to produce long (20-30 minute) discussion shows featuring Ministry doctors and the like, covering an area like CDD very thoroughly. This approach is based on a confidence that people will follow the academic treatment and adapt the measures called for. Usually a program like this is only on once - another presumption that coverage will equal audience impact.

We recommend short spot announcements, to be aired frequently, to build awareness and interest in MADZI-A-MOYO and to reinforce those who have already used it. Radio reaches about 20 percent of the population, considerably fewer people than in other developing countries, through two frequencies - one in English, one in a local language depending on the region. With the calamitous state of the economy, disposable income for radios and batteries is being squeezed, making radio's reach ever more limited.

Update

A series of 12 radio programs on CDD/ORT have been completed and another series initiated. The first series focussed on interviews with physicians and the second will be with nurses, mothers, and urban clinic health workers.

8. Television. The TV audience is estimated at 100,000, a small but probably influential group. With an eye to cost-effectiveness, the CDD team would be advised to spend limited but targeted funds on TV spots, to reach urban doctors and chemists and to make MADZI-A-MOYO visible through every medium. The spots should be integrated with logos, slogans, and songs that are used in other media.

9. Theater groups. Theater groups are a very popular form of entertainment in Zambia. These are groups of young people who can be hired to develop simple ways of focusing on a typical subject. The groups usually perform in the open-air and can often draw crowds of hundreds of people. PRITECH contracted with two theater groups who developed plays around diarrhea and ORT/MADZI-A-MOYO, which they have been performing twelve times a week in every Lusaka peri-urban compound for three months. It is estimated that they will reach over 100,000 people including door-to-door campaigns spreading the ORS message. A second period of performances is scheduled to begin in October.

Update

In August UNICEF sponsored a two-week workshop in Charywe which brought together teachers from all over Zambia to teach them how to develop plays and dramatic health education messages, particularly UCI/CDD. PRITECH sponsored the Maloza theater group and also provided transportation for several theater groups who performed in villages

near Charywe. Already in extensive use in Lusaka, CDD theater groups are a culturally appropriate face-to-face channel to make MADZI-A-MOYO visible through every medium. The spots should that is currently reaching over 10,000 people a month in their own neighborhoods. Theater groups raise awareness of MADZI-A-MOYO, and tell people to ask for the packets at the health center and chemist. When the flyers are available, they should be given out at these performances; packets, however, should not be given out on these occasions.

Zambia is a diverse nation, with no one medium that covers all its people. Its broadcasting coverage is remarkably limited. To reach broad sections of the population, a broad approach is called for, using all of these channels. But while there should be diversity in media, the message should be unified and repeated from all these outlets. The CDD program needs a slogan; a musical signature or jingle for use on radio, TV, and in theater groups; a logo; perhaps a spokesperson for broadcast and print material - a real person or a cartoon character. In sum, the CDD program needs an integrated marketing campaign to make MADZI-A-MOYO the medicine for diarrhea.

PRITECH has already begun to develop some of these elements. A song contest and a poster contest are underway. The current MADZI-A-MOYO logo should be carried forward, once minor adjustments are made in it. The theater groups represent a tremendously energetic and authentically Zambian touch, whose performances could be taped for broadcast or excerpted for radio or TV spots and one of whose characters might become the MADZI-A-MOYO spokesperson. The theater groups could use a jingle, rather than repeatedly shouting the MADZI-A-MOYO name. The theater groups could run a contest after their performance, giving small prizes (T-shirts, for example) to randomly chosen contestants who would be asked to mix and administer MADZI-A-MOYO. These contests could be taped for broadcast.

Update

Recently a social mobilization expert arrived at UNICEF and discussions have been continuing regarding the formation of a larger health education coordinating committee to bring together all donors involved in producing health education materials for child survival. The possibilities of producing a 16mm. film, an CRS video, and a song competition have also been discussed.

Other suggestions

- o use of celebrity spokespersons - to be tested first for credibility,
- o more thorough pretesting for all mass-media materials,
- o use of the mails to distribute health-education materials, perhaps even packets. The mail system is slow but quite sure, with a system of district distribution points and village runners that

makes the postal system the mass medium of greatest potential in Zambia, certainly for the actual delivery of materials to rural health workers. The CDD program, being a government operation, can use the mails free; health workers, likewise, can respond through the mails free. PRITECH became aware of this potential during a recent mail survey conducted by the PRITECH representative. Returns on mail surveys rarely exceed 20 percent, and here in Zambia in the case of rural respondents, even 20 percent seems optimistic. Response so far has been 94 percent. Clearly, rural health workers are anxious for any communication that breaks through their isolation and, clearly, the mail gets to them and back. The CDD program is strongly urged to use the mails for distribution of their material, and to integrate "direct mail" into their marketing of MADZI-A-MOYO.

In considering what additional technical assistance that PRITECH could provide, we are leaning more toward a social-marketing person rather than toward a health-education person, for several reasons. First, the HEU is not a focussed unit that could serve as a constructive counterpart for a health-education consultant. With the mechanism of the Health Education Committee in place, there is not the urgency to work within the HEU as there might have been. Second, the GPL is anxious to mount a marketing campaign in promotion of MADZI-A-MOYO and may welcome some technical assistance to do so. Third, PATH is developing a proposal to help Inter-Chem with the marketing of its ORS product, but USAID wants this to be coordinated through PRITECH. It makes sense, therefore, to think of a PRITECH social-marketing consultant who would work both with the parastatal GPL and the private Inter-Chem.

PRITECH is committed to the underwriting of these education/communication efforts.

10. Monitoring/Supervision. Given the transport situation as described in the earlier section on logistics, the ability of the MOH to oversee its outposts is minimal. Dr. Himonga has scheduled a series of provincial supervisory tours, over the period of May to October of this year. Although he himself will not be a part of any of the two-to-three-person teams that visit each of the nine provinces, he has directed his people to look at both EPI and ORT status. Relating to CRS packets, the teams are to review their distribution and use and to offer seminars on CDD to provincial staff. The teams are directed to visit two districts in each province (meaning that 18 out of 57 districts will be visited) and to interview key health personnel at the district level.

These tours represent a major, but obviously limited, effort at monitoring and supervision within the EPI and ORT programs. The absence of a regular supervisory mechanism and of a regular flow of health statistics seems likely to characterize the MOH system for some time to come. Until then, supervision and monitoring will be done on an ad hoc basis, such as these tours, and through the occasional availability of transport from PRITECH, SIDA, CMAZ, or other organizations.

An area where more systematic monitoring and data gathering can be carried out will be at the UTH ORT unit. Even now, many months before the unit becomes operational, Dr. Bhat, a UTH pediatrician, is reviewing records of previous pediatric diarrhea admissions to develop a baseline against which performance of the ORT unit can be measured. It may be that the ORT unit can provide a useful research site for many nurses in training, whose requirements include a research project. At the very least, the UTH unit should routinely gather data on its patients as a way of documenting and reinforcing its role as a regional ORT center.

11. Evaluation. PRITECH, WHO, and the MOH have collaborated in a major nationwide baseline survey of mothers to determine current knowledge, attitudes, and practices relating to home management of diarrhea. The PRITECH representative is following this up with mail surveys of rural health workers, private physicians, and chemists. For the analyses of these data, PRITECH has provided a micro-computer and WHO/Geneva has sent out a survey consultant.

Data analysis is still on-going, but the first results should be published by the end of June 1987, in time to be useful for the design of the CDD program in general and of certain educational materials in particular. In addition to the results from mothers, the health workers' and chemists' results are already yielding concrete suggestions for the improvement of the CDD program.

A repetition of the KAP survey is planned for late 1987, in the same months that the survey was carried out last year. Building on last year's baseline, the idea is to identify trends for program refinement as well as indicators of program impact.

We recommend that the most useful indicator of program impact be the effective use of ORT. Because diarrhea is an event experienced many times by many children, whereas death-from-diarrhea is at least a hundred times less common than diarrhea itself, from a measurement point of view, diarrhea and its treatment are what we should try to measure. From these measurements it will then be possible to make an inference about the impact of ORT on deaths - based on what clinical studies have told us about the live-saving potential of the effective use of CRT. In Zambia, as elsewhere, reduction of mortality is the goal of the CDD program; but in Zambia, as in other developing countries, the health-statistics system is not robust enough to provide accurate data on actual deaths, and still less able to provide accurate data on cause of death. In addition to these deficiencies, useful data would also include the child's treatment before death as well as partialing out of major secular trends like the free-falling Zambia economy, AIDS, and regional drought. Price spirals are causing alarming reports of increased malnutrition in young children and infants, with reports of malnutrition deaths from some major Zambian hospitals way up.

Update

The Zambia CDD/EPI baseline survey report 1987 is complete and has been published by the MOH. Copies are being widely distributed.

ISSUES/PROSPECTS

1. CDU Plan

The Zambian CDD program is moving forward slowly and somewhat spasmodically and there is a lack of an overall detailed implementation plan for an integrated program. For instance, a promotional campaign for MADZI-A-MOYO is getting underway with little knowledge of how many packets are available in hospitals and health centers and no ORS in CMS; the MOH is training non-clinical workers who then face conflict with doctors yet to be convinced of ORT; it is hard to ascertain exactly who has been trained in ORT and what training materials they have been provided; the MOH is promoting MADZI-A-MOYO while UNICEF imports UNIPAC sachets.

MOH, UNICEF, WHO and PRITECH together developed a detailed implementation plan to cover the first 18 months of the CDD program, incorporating all elements of the program, to ensure commitment by each participating organization to its contribution to the program. In addition, there should be a timetable within each element and these should be coordinated, e.g., a timetable for development of health education/communications materials, a timetable for training of clinical officers and health assistants, a timetable for training of doctors, etc. Each element needs a plan which fits into the overall national program.

2. The renovation of the UTH is expected to start in the near future. This ORT training center is expected to be the WHO sub-regional training center. It is hoped that the center will be opened by the President; but this requires planning in order to schedule the President's time. A timetable is required for the renovation, equipping, furnishing, and staffing of the center with a view to having President Kaunda open the center possibly at year-end. In addition, plans need to be developed for how the center will function as a national and sub-regional ORT training center once it is opened. Aware of the amount of organization required to make the center operational the team reminded the DMS that someone (Dr. Mubita or Dr. Mulenga) needs to be appointed to take permanent and continuous responsibility for the center. In addition, WHO has made considerable contribution to the center but will need an active presence in Zambia to assist the UTH in this endeavor.

3. ORS Production/Supplies

Now that the MOH has decided on a one-liter packet of MADZI-A-MOYO and the HEU is developing its materials around this name, we believe it is important that, to the extent possible, only one-liter

MADZI-AMOYO is made available in Zambia. To this end the GPL should be encouraged to continue production of MADZI-A-MOYO. We hope that UNICEF will support this position and use UNICEF funds to purchase raw materials for local production of ORS rather than importing UNIPAC sachets. The whole concept of local production is fragile and should not be threatened by being subject to the vagaries of the exchange rate. It is essential to the program that UNICEF make a firm commitment to local production of MADZI-A-MOYO.

GPL is diversifying by promoting and selling MADZI-A-MOYO through commercial outlets and possibly to neighboring countries as well as supplying the CMS. It is probable that PRITECH and project SUPPORT will provide marketing expertise to GPL and Inter-Chem which should ensure a uniform message.

4. Distribution

PRITECH is presently, through a survey, trying to ascertain the distribution of CRS to health centers, chemists/pharmacies, and private practitioners. There are a number of distribution channels available in Zambia which should be examined. When the returns are in from these surveys it is recommended that PRITECH hire a logistics/distribution expert to examine these findings and to look into alternative methods of distribution

5. Dissemination of information/materials

To spread the ORT message, there should be further exploration and development of improved liaison with various agencies involved directly or indirectly with the CDD program, including SIDA's EDP, the MOH EPI program, and the various nutrition programs, and any programs being developed in connection with AIDS. In addition, connections should be explored with CMAZ and with womens' groups, such as the Zambian Women's Alliance, for their assistance with the promotion of ORT; also, groups such as the Boy Scouts, Girl Scouts, and additional linkages with church groups (not only medical) should be pursued.

The linkage with traditional healers, both through the MOH and through their Association, as well as in the rural areas, should be investigated. Experts on traditional healers, such as Dr. John Milimo, should be contacted for their input regarding the possibility of using traditional healers for ORT and even for ORS distribution.

People Met

- Dr. Evariste Njelesani, Director of Medical Services, MOH
- Dr. H.B. Himonga, CDD/EPI Manager, MOH
- Dr. Dirk De Coeyere, Instructor, Chainama College of Health Sciences, Belgian Aid Program
- Mr. Ted Morse, Director, USAID/Lusaka
- Dr. Eileen Keane, DMO, Monze
- Dr. Rita O'Brien, District Hospital, Monze
- Dr. Brenda O'Sullivan, District Hospital, Monze
- Dr. Okpara, DMP, Mazabuka
- Dr. Pilie, Children's Ward, District Hospital, Mozabuka
- Mrs. Sindele, Matron, District Hospital
- Dr. Stefan Salmonson, WHO EPI/CDD Associate Expert, MOH
- Dr. G. Bhat, Pediatrician, UTH
- Dr. Mary Shilalukey, Pediatrician, UTH
- Dr. C.M. Ngubai, Director, HEU
- Mr. Elastus Lwando, HEU
- Mr. Nicholas Phiri, HEU
- Mrs. Mary Kaoma, PHN, CDD Program
- Mrs. Annie Mupinde, PHN, CDD Program
- Dr. W. S. Boayue, WHO Representative
- Mr. Aston Manyindo, UNICEF Program Officer
- Mr. Nawa Anaene, GPL Marketing Director
- Dr. M.A. Ansari, Medical Illustrator, UTH
- Dr. Hilda Bastanei, Chainama College, Belgian Aid Program
- Dr. K.V. Rao, Acting Principal, Chainama College, Belgian Aid Program
- Dr. R.S. Patel, MOH/PHC
- Dr. K. Mukelabai, Dean of Pediatrics, UTH
- Ms. M. Nordenfelt, Health Programme Officer, SIDA
- Mr. Ulf G. Rydell, SIDA Drug Programme Team Leader
- Dr. H.N. Siulanda, UNICEF Program Officer
- Dr. Sinyangwe, MOH/PHC
- Mr. Simon V. Siatwinda, Information Officer, WHO

AIDS in Zambia

The GOZ has started a national AIDS program in Zambia. An AIDS poster was seen in all health facilities visited by the team and in pharmacy windows; on requesting the Health Education Unit for a copy of this poster we were advised they are out of stock and awaiting a new printing. In addition to this poster (which has no pictures but is colorful and promotes safe sex, clean needles and syringes, and high standards of personal hygiene), another poster which pictures a couple in silhouette has now been developed as well as leaflets and booklets. These materials are now at the printer awaiting release of funds by the MOH before production starts.

Other materials available included:

1. A colorful leaflet "AIDS -- Minimize your chances of infection" for the public.
2. A booklet "Guidelines on Prevention of AIDS" for health care workers.

In a very wide-ranging discussion with a District Medical Officer in Southern Province, the impact of AIDS on infant and child mortality was convincing. Although unable to confirm her views with blood tests, the DMO feels strongly that many of the children recently admitted and currently being treated at the District Hospital for diarrhea, malnutrition, TB, skin diseases, and other infections are really suffering from AIDS. Many children who would be expected to respond to the appropriate treatment for these conditions instead grow weaker and die. Failure of the hospital to save these lives leads to loss of confidence in the hospital. The DMO noted that several mothers refused to allow their children to be admitted to the nutrition unit, because two children had recently died there -- despite proper care and feeding.

This loss of confidence can easily be attached to ORT, or to any therapy for any AIDS-related condition. There is a reluctance on the part of the MOH to discuss, or allow to be published, specific figures on AIDS, and there has in fact been very limited testing for the AIDS virus available within Zambia -- so hard statistics are simply not there.

Zambia will be one of a number of African countries to be part of an unprecedented WHO epidemiological study on AIDS. WHO will set up and equip and train staff for thirty AIDS-testing centers throughout Zambia, the goal of which is to define the scope of the problem. It remains to be seen who will be tested - will some groups be required to be tested, or will testing be totally voluntary?

In the view of at least one DMO, sexual promiscuity continues apace in Zambia's urban areas (which includes half of the population) and is even being seen in villages among the young. The lack of

accurate statistics may allow imaginations to run too far -- or the many indicators of an AIDS epidemic in Zambia may make the gathering of accurate statistics a very grim accounting indeed.

For the CDD program, the presence of AIDS in under fives greatly complicates the program's efforts.